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MAY 1954 • Vol. 29, No. 5

Table of Contents on Page 2



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MAY 1954, VOL. 29, NO. 5

Table of Contents

Vol. 29

May 1954

No. 5

ARTICLES

Undergraduate Instruction in Ophthalmology —R. M. Fasanella.....	15
The Aim of Continuation Medical Education —Walter S. Wiggins.....	20
Total Health—A Conceptual Visual Aid —Julius B. Richmond, Seymour L. Lustman.....	23
Initial Orientation of Medical Students —Davis G. Johnson.....	31
Use of the Rorschach Method in Medical Student Selection —Leonard D. Eron.....	35

EDITORIALS AND COMMENTS

State Residency Restrictions.....	40
An Important Warning.....	40

NEWS DIGEST..... 42

College Briefs..... 44

AUDIOVISUAL NEWS..... 53

BOOK REVIEWS..... 61

THE PERSONNEL EXCHANGE..... 69

Association Officers, Staff, Committees..... 4

Index to Advertisers..... 10

Calendar of Meetings..... 10

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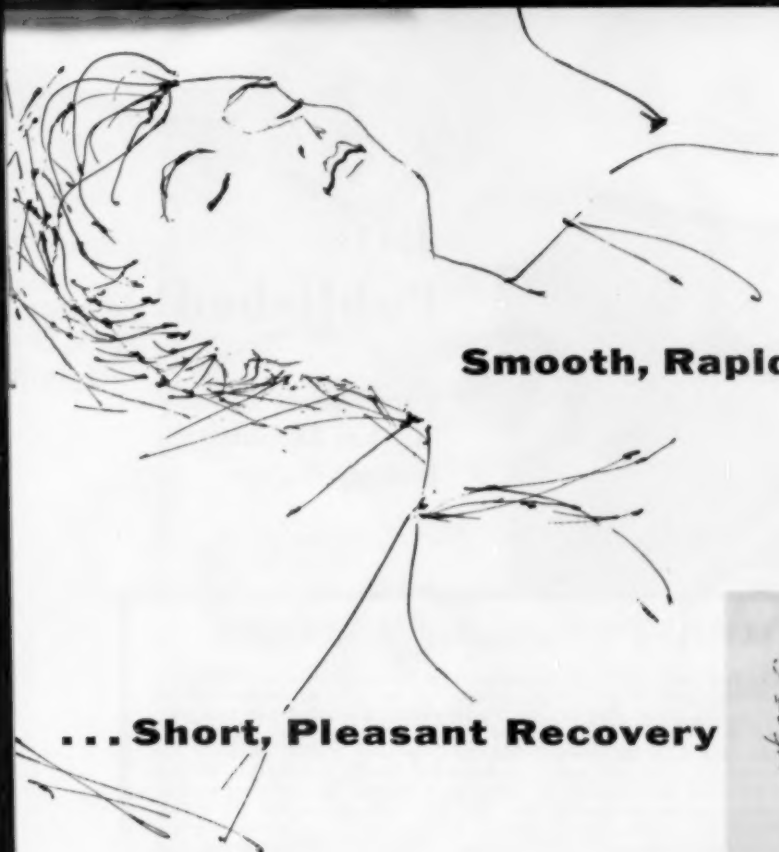
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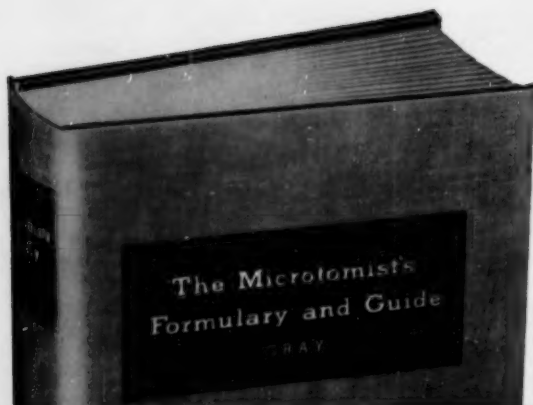
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Academy of Psychosomatic Medicine—Oct. 8-9; Plaza Hotel; New York City.

American Association on Mental Deficiency—May 18-22; Marlborough-Blenheim Hotel; Atlantic City.

American College of Cardiology—May 27-29; Conrad Hilton Hotel; Chicago.

American Federation for Clinical Research—May 2; Haddon Hall; Atlantic City.

American Gynecological Society—May 20-22; The Homestead; Hot Springs, Va.

American Hospital Association—September 20-23; Palmer House; Chicago.

American Laryngological Association—May 27-28; Hotel Statler; Boston.

American Laryngological, Rhinological and Otological Society—May 25-27; Hotel Statler; Boston.

American Medical Association—June 21-25; San Francisco.

American Otological Society—May 23-24; Hotel Statler; Boston.

American Pediatric Society—May 3-5; Buck Hill Falls, Pa.

American Psychiatric Association—May 3-7; St. Louis.

American Society for Clinical Investigation—May 3; Haddon Hall; Atlantic City.

American Society for the Study of Sterility—May 13-15; Roosevelt Hotel; New Orleans.

Association of American Physicians—May 4-5; Atlantic City, N. J.

Fourth National Conference on College Health—May 5-8; New York.

International Anesthesia Research Society—Oct. 10-14; Los Angeles.

International Cancer Congress—July 23-29; Sao Paulo, Brazil.

International Congress on Gynecology and Obstetrics—July 26-31; Geneva, Switzerland.

International Congress of Hematology—Sept. 6-11; Paris.

International Congress on Mental Health—August 14-21; Toronto, Ont., Canada.

International Congress of Ophthalmology—September 10-11; Montreal, Canada.

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Medical Library Association—June 15-18; Statler Hotel, Washington, D. C.

National Tuberculosis Association—May 17-21; Atlantic City, N. J.

Society of American Bacteriologists—May 2-7; William Penn Hotel; Pittsburgh.

Society for Pediatric Research—May 4-6; Buck Hill Falls Inn; Buck Hill Falls, Pa.

Student American Medical Association—May 1-3; Chicago.

World Congress of Cardiology—September 12-17; Washington, D. C., and Bethesda, Md.

World Medical Association—September 26-October 2; Rome.

Index to Advertisers

Abbott Laboratories.....	7
American Optical Company.....	11
Appleton-Century-Crofts, Inc.....	3
Blakiston Company, Inc.....	8, 68
Borchardt Malt Extract Company.....	12
Lea and Febiger.....	64
J. B. Lippincott Company.....	Fourth Cover
Macmillan Company.....	14
McGraw-Hill Book Company.....	Second Cover
C. V. Mosby Company.....	66

Parke, Davis and Company.....	13
Charles Pfizer and Company.....	Third Cover
J. B. Roerig Company, Inc.....	5
W. B. Saunders Company.....	Front Cover, 1
Smith, Kline and French Laboratories.....	56
Taylor Instrument Company.....	60
Williams and Wilkins Company.....	70
Winthrop-Stearns, Inc.....	52
Woodward Medical Personnel Bureau.....	69
Wyeth, Inc.....	9

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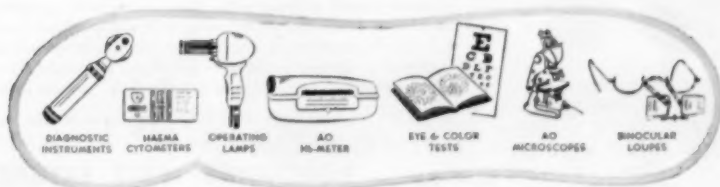
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I. Cass, L. J. and Frederik, W. S.: Malt Soup Extract as a Bowel Content Modifier in Geriatric Constipation. *Journal-Lancet*, 73:414 (Oct.) 1953.

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Undergraduate Instruction in OPHTHALMOLOGY

R. M. FASANELLA

NEWLY ARRANGED hours and methods of teaching ophthalmology to undergraduates at the Yale medical school have resulted in a greater interest in eye at the student level. Trial and error, changing the program to meet the needs of the students, the school curriculum and assignment of the teachers have been rewarded by an increase in investigative work and the orientation of a high caliber of medical student toward ophthalmology as a future career. The program is flexible in detail but basically follows a pattern.

Junior Year

An important factor in the progress has been the excellent cooperation by the department of surgery (under which ophthalmology falls as a section) in granting time to teach the students. Four years ago for the first time, junior students were assigned from the clinical clerkship in general surgery to spend a full one and sometimes two weeks in ophthalmology. The student so assigned follows the resident or assistant resident from the time he starts his rounds until he finishes his day with the admission of new patients. He is called for all emergencies. With the consent of the men concerned, he sees almost every private and ward patient in the hos-

pital, thereby gaining a personal acquaintance with hospital cases and problems. He helps with dressings as the resident makes his rounds.

He works in the refraction clinic and learns the principles of refraction by helping on at least one complete refraction. However, the large part of the time in refraction is spent in examining each fundus (practically all of which are dilated with pare-drine at least). Here many students confess seeing for the first time such things as normal maculas and discs. All minor emergencies that present themselves during this time are not only seen by this junior medical student but are treated by him if he is able to do so under the careful supervision of the resident.

In the general eye clinic, the medical student is again assigned to the resident and the assistant resident. He becomes familiar with the normal variations of ocular tension. Every postoperative ward case is seen by the student who aids the resident by holding the lids while cataract sutures are removed, etc. Every interesting case in the clinic having to be seen by the resident for disposition is likewise seen by this junior student and the discussion by the chief of clinic or staff is followed step by step.

The junior student sees or helps on every operative case during his stay in ophthalmology. He examines and writes a complete history and physical examination on every ward pa-

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tient. This is checked and corrected. He helps in indicated laboratory procedures. In extra ocular work, he may even at times serve as first assistant thus furnishing another willing assistant in the operating room. He watches the writing of postoperative orders and helps return the patient to the floor.

Hospital consultations of interest are seen by this junior student and he attends all conferences in ophthalmology and related fields, such as neurological conferences. He is given an orientation lecture prior to the strabismus or glaucoma clinic and sees many of the cases in these clinics. He is introduced to the examination of infants' fundi on retrolental clinic days and assists on minor surgical procedure in the eye clinic and does, under supervision, several field examinations. During his stay the student tries to follow his cases and reads one of the smaller standard textbooks of ophthalmology. A few manage to read most of such a textbook.

Some of the students substitute as interns when one of the members of the house staff is ill or on vacation. Since the institution of training the junior students, the supply and desire to substitute has by far exceeded the demand.

Senior Year

In the senior year, two plans had been tried. One consisted of teaching groups of seven to ten students by one member of the department for a period of five and one-half weeks. Knowing that previous trials of breaking this down into a series of lectures by different members of the department had not worked well, one teacher was assigned to a group of three two-hour sessions per week. This meant continuity and absence of unnecessary

repetition in the teaching. The first hour was devoted to didactic teaching with the last hour devoted to interesting cases of the general clinic which was in session at the time.

A second method consisted of an intense preliminary didactic course open to the entire senior class, and utilized the best of the teachers who were interested or wanted to make the time to teach. This was an elective course and had to be given at the only time the senior class was free as a body — from 8 to 9 A.M. on each Saturday. The field of ophthalmology from a medical student's viewpoint with a stress on the general practitioner's training was reviewed. All these sessions were conducted by the section chief and prior to each session the current lecture was correlated, when possible, with that of the preceding lecture. In addition, lectures by the section chief at the end of the session were given and further correlated. This was accompanied by optional oral quizzes.

The individual group of seven to 10 students assigned to ophthalmology for a half term in the senior year is given an intensive five- to six-hour review in two to three afternoons which includes: the taking of a good eye history, examination of the patient and writing of the eye charts in an intelligent fashion. This period also includes a review of abbreviations used for the phorias, tropias, the "tree" used in refraction, etc. These seniors are then permitted to take a history, examine, make a differential diagnosis and give recommendations for a new patient in the general clinic. Each student is assigned a new patient when possible and then presents his case for correction and suggestions to a staff member. Routine refractions are referred to the refraction clinic.

Problems in Teaching

There are many problems connected with teaching a specialty such as ophthalmology to a group of undergraduates. Basically, these may be reduced to three factors: (1) the medical school and hospital—especially their objects and aims; (2) the student; (3) the teachers.

(1) *The Medical School*: At Yale, required courses are outlined and attendance is optional, with examinations compulsory only at the end of the second year and the fourth year. Within recent years the national board examination has been substituted and generally takes the place of the school comprehensive examinations. In the comprehensive examination, at best, one question was asked in ophthalmology. On the national boards, given after internship, the student was examined in ophthalmology in Part III. He may or may not be asked a question about ophthalmology under medicine or pediatrics while writing Part II of the national board.

Ophthalmology is now being allotted increased time at surgical grand rounds, journal clubs and noon clinics, which are large gatherings attracting junior and senior students in addition to residents, practitioners, faculty members and specialists. Throughout this program, the thesis being emphasized is that the student cannot be a good general practitioner or even a specialist without an adequate knowledge of eye. In turn, a competent ophthalmologist must be well-grounded in medicine, pediatrics, neurology and surgery. Certainly, a good practitioner or specialist should be proficient in recognizing eye problems (i.e., glaucoma) early enough to send the patient to the ophthalmologist.

In the hospital a plan has been

effected which centralizes ward and private patients with eye problems in a single unit. This improves patient care, nursing and teaching. An attempt is made by the eye service to attend other departmental conferences such as neurosurgical, x-ray, tumor, etc. The ophthalmologists' opinions are now eagerly sought by formal consultation request or personal request if at a staff conference. Consultations are rendered quickly and conscientiously and cooperation with other departments has been found mutually beneficial.

(2) *The Student*: The student is usually somewhat uncertain as to precisely what he wants to do after medical school. He is most eager and most easily indoctrinated in ophthalmology during his junior year and to a somewhat lesser degree in the early part of his senior year when his interests appear to crystallize. In the third year a large set of basic examinations are behind him. His senior examinations, thesis, intern applications and interviews are then too remote to be pressing. The week or two of close association with the resident or assistant resident serves to introduce him to ophthalmology at a time when he is being introduced to medicine, psychiatry, pediatrics and surgery. It certainly gives ophthalmology a needed recognition of relative importance at an appropriate time. The eye problems of medicine, pediatrics and surgery can be assimilated and correlated. His junior year status gives him license to ask "stupid questions" which can break up a thought block. Thus, this leads to increased general understanding. His questions can be asked of someone nearer to his years and period of training.

For example, he learns that to use fully the tools of diagnostic neurology

the use of the central, peripheral and stereocampimeter fields is fundamental; he learns that eye instruments can readily be adapted to plastic surgical procedures on the face or hand; he learns that the "loupe" can be used in sympathectomies or by the oral surgeon. The junior year also permits him to explore his interests early in his career about thesis problems or about the requirements in ophthalmology as a profession.

Although it is not the principal aim of Yale to produce eye specialists and although the teaching of ophthalmology from a practitioner's viewpoint is emphasized, excellent students actually have been attracted to ophthalmology early in their careers. For example, in a class of approximately 60, four senior theses in ophthalmological subjects were submitted in one year. Two of these were good enough to be published in ophthalmological journals. Four of the students in the last two years made plans while still in medical school to follow ophthalmology as a career.

It is felt that there is a definite place for some didactic lectures in ophthalmology in medical school despite a definite trend away from didactic teaching. From a student's viewpoint, the didactic course given in connection with the basic work in practical ophthalmology during the junior year is very popular. Despite the fact that this course was given at 8 to 9 on Saturday morning as an elective, about 52 of a class of approximately 60 attended.

These senior lectures were given at the beginning of the year. The same lectures given after the Christmas holidays would certainly have had a poor attendance because of the priority generally given by the student to his senior examinations, thesis,

etc. Given early in the scholastic year, the student has been found to read a standard short textbook. The didactic background also serves to give the students further background for their senior ophthalmic clinics in as much as it is felt that time lost in repeating didactic background is time lost in seeing patients. Previously, because of a crowded schedule, the didactic training was attempted during the clinic time but students complained of not seeing these patients. A didactic background has been shown to be reflected in the intelligent questions and quality of the work-up by the students. At first, it was felt that a medical student definitely would not be qualified to participate in the work-up of a patient from an eye standpoint. The gratifying results noted have caused a reversal of this opinion.

No marks or compulsory examinations were the motivating force. The students enjoyed verbal quizzes and here, as in the clinics, no marks were recorded other than the general impression. It is felt that recording only marks, as such, records only how good or poor the teacher is and not the student. The medical school admission selection, and to a lesser extent, the second-year examinations together with other evaluations eliminate undesirable students. Personal pride and embarrassment before their classmates in oral quizzes certainly serve as a stimulus to study and review.

(3) *The Teacher:* From the teacher's standpoint the following are some of the practical problems.

A subject is usually only as interesting as the teacher. Unless the teacher can put enthusiasm into his teaching, the cause is lost. It is easy from the teacher's standpoint to excuse lack of preparation by saying

that the only thing a student will retain is what he digs out for himself. Admittedly some of the staff are poor teachers even though they may be excellent doctors in regard to the case and the patient. Some potentially good teachers have a large private practice and will not sacrifice the time necessary to teach at a medical school level.

Some are excellent teachers but are not punctual regarding their clinic or teaching appointments and this is important since contact with students can be spoiled by irregular attendance and lack of punctuality. Teaching the same subject six times a year to small groups is boring. Teaching a small group for six weeks has proved excellent from the students' standpoint. The teacher and student get to know each other. Some persons are excellent teachers but fall down in the picture of running a total clinic; i.e., the management of the clinic, residents, operating room schedule, etc. The number of teachers who are willing and capable of good teaching is often so small that it means a boring, constant repetition of a single subject during the year by a small group.

Although teaching didactically is not considered as good as case teaching, a certain amount is necessary. If, as is often the case, the teaching of students takes place at the same time and place as the clinics, some responsible person must be present in all the clinics to gather, hold, and at least give a brief history and findings of these cases. Other activities such as the arranging of the operating room schedule, conducting a busy practice, etc. often work to undermine such a system. The patients, nursing personnel and clerical staff

assert it unduly prolongs their day to have the patient wait after being seen once in the clinic to be reseen by a group of medical students an hour or two later.

The value of assigning the student to the service for a full week or two depends, of course, on a competent house staff. The house staff is in turn rewarded with respect and the completion of chores such as laboratory work, returning of patients from the operating rooms, etc.

Summary

In summary, a big boost in the teaching of the medical student has been the one to two full weeks of assignment to the section as a full-time job. This is not new to teaching but is new to the Yale medical school and perhaps new to most medical schools.

This teaching or apprenticeship supplemented with a brief didactic course sandwiched into his senior clinic has to date seemed most satisfactory to the student and the teachers. This program has resulted in a new respect for ophthalmology and has served to stimulate research.

It also resulted in good students early in the medical years seeking ophthalmology as a career. The big problem is to try, in the face of an ever-expanding medical curriculum, to find time for this type of a program in ophthalmology.

BIBLIOGRAPHY

Undergraduate Instruction in Otolaryngology: A Symposium by the Teachers Section of the American Academy of Ophthalmology and Otolaryngology—LAWRENCE R. BOIES, M.D.—A Supplement to the Transactions of the American Academy of Ophthalmology and Otolaryngology, October 8, 1950.

The Aim of Continuation Medical Education

WALTER S. WIGGINS

I SHOULD LIKE to consider this topic in its two parts—first of all, the aim of continuation medical education in the broad sense. All efforts in this area of education have basically only one purpose and that purpose is the same as the only ultimate reason for the existence of medical schools—to provide the best possible medical care in its total sense to as many people as possible.

Inherent in this broad aim as it is applied to continuation education are several objectives of varying significance in varying settings, but always of sufficient importance to warrant consideration. Some of these objectives are as follows:

1. Education of physicians.
2. Education and training of ancillary personnel.
3. Stimulation of hospitals to provide additional services necessary for a good quality of medical service.
4. Broadening of the hospital administration's concept of the function of the hospital so that it is viewed as a focal point for health services and health education in the community.

The first of these objectives is possibly the most pertinent, but a few

words concerning the others may be of some value. If an educational program for physicians is successful, it will sooner or later create the need for additional diagnostic and therapeutic facilities and perhaps personnel. It would be unfortunate indeed if this desire fell on infertile ground. Similarly, it would be unfortunate if the program pointed out the need for additional personnel within any hospital and to have the hospital receptive to this need, only to learn that no mechanism existed for securing such personnel. The sponsoring agent of any program for continuation education must certainly be aware of the attitudes of the hospital administrator and trustees toward such developments and when a narrow attitude exists be prepared to deal with it. We share with others the feeling that any agency that sponsors a program of continuation medical education assumes, as much as its resources permit, the responsibility for participation in much more than those things designed primarily for *physician* education.

Before considering whether the aim of continuation medical education should be the dispensing of information or aiding in self-education, perhaps it would be well to spend a few moments on the sponsoring agent. It may seem foolish to consider here the role of the medical school, but there are in most, if not

Dr. Wiggins is associate secretary of the Council on Medical Education and Hospitals of the American Medical Association. This article is adapted from his speech at the open meeting of the AAMC Committee on Continuation Education during the Association's 64th Annual Meeting, October 1953.

in all schools, respected faculty members who do not feel this is a proper function of the medical school. Participation in this is often grouped with other bothersome functions that are burdening academic departments to the detriment of their responsibilities to medical students and research programs. It is also pointed out that there are other medical organizations active in this area and therefore, no need for medical schools' participation in a broad sense, or at least no need for the school to assume major responsibility. Certainly other medical organizations have much to contribute and the combined resources of all groups should be fully utilized, but if the broad objectives previously mentioned are acceptable, then it becomes apparent that the medical school, above all other organizations, must assume the major responsibility since it alone is in a position to cope with most, if not all, of these objectives.

Lifetime Practice

There is a further compelling reason for medical schools to play the major role in this area of education. A medical school should not be judged on the ability and competence of its students at the time of graduation. The important measure is rather the quality of medicine that those graduates practice throughout their lifetime. There can be little argument that a physician who does not adequately continue his education can not for long render adequate medical care. I think we can all accept the fact that there are many physicians who are not continuing their education. If there was another just as obvious defect in the character of medicine practiced by the graduates of a medical school, few can doubt that the school would take

whatever measures necessary to overcome that deficiency in the training of its students. Should not the medical schools be just as concerned with the defect in continuation medical education and should they not also be just as eager to overcome this defect?

Is the aim of this field of education a dispensing of information or aiding in self-education? This question is certainly one of the foundations on which many recent curricula changes have been structured. In a recent Commonwealth Fund report this matter is termed the shifting of "emphasis from teaching to learning." Sir Clifford Albutt, the regius professor of medicine at Cambridge University, has said, "The function of the university is not the qualification for the practice of any art or trade, but is a training of the mind, a formation of habits of study, of easy handling of ideas." Is it not true that today the vast majority of people interested in medical education would accept this answer? It has been proven objectively that retention of facts is poor but that concepts are much better retained. We should utilize facts in teaching so that concepts may be learned and hope that the concepts are what remains after the facts that have been taught are forgotten.

There have been many changes in the medical school curriculum throughout the country. One of the trends that can be found in these various changes certainly is the decrease in the number of lecture hours. Perhaps much of the resistance that has been present in regard to decreasing the number of lecture hours arises out of two factors, the first of which is the tremendous accumulation of facts and the continual increase in the stream of new knowl-

edge. Certainly the most economical and easiest way to present this huge array of facts is in the form of a lecture; however, the value of a lecture is mostly dependent on the lecturer and least dependent on the factual content of the lecture. A good lecturer is good because he stimulates his audience to think, read and otherwise educate itself. Perhaps the second factor is that more teachers in medical schools feel that they are good lecturers than is, in fact, the case.

Fewer Lectures

Are not many of us here guilty of giving only lip service to the principle of learning versus teaching? A large percentage of all brochures describing continuation courses start with the words "new concepts of" or "new approaches to" the diagnostic, therapeutic and physiological aspects of certain disease states. Although such a title is seductive, if one examines carefully the brochure one learns that there is to be hour after hour of lecture. One would have to question whether or not there are that many stimulating lecturers in any institution.

What are good educational principles for undergraduate medical students are equally good principles for the education of practicing physicians. Perhaps we should make greater efforts to get the student, the patient and the teacher; or the student, the teacher and the laboratory together in our endeavors in post-

graduate education and be less concerned with counting the slumbering heads of registrants at our continuation courses. Implementation of these principles of medical education is relatively easily obtained in most extramural programs where the number of physician participants is usually not so bulky as to make this approach unwieldy. However, we are not any more justified in saying that this approach to intramural continuation courses is not feasible because of the numbers of postgraduate students participating than we would be to use the same reasoning in regard to the curriculum for undergraduates.

Another major trend apparent in curricular changes is toward making greater use of the behavioral sciences so that, it is hoped, our newly graduating students will have to rely less on their intuitive powers in assaying the effects of the patient's emotional and social environment. We should certainly consider whether we are making sufficient efforts in this area at the postgraduate level.

Perhaps we can hope that the tremendous amount of thought and effort that is going into changes at the undergraduate level of medical education will be fruitful enough to impregnate "a formation of habits of study, of easy handling of ideas" to such an extent that we will sometime in the future no longer need to be as much concerned with the need for organized programs of continuation medical education as is true at the present.

Total Health— A Conceptual Visual Aid

JULIUS B. RICHMOND and SEYMOUR L. LUSTMAN

BASIC TO THE PRACTICE of medicine is a comprehensive view of the human organism and its relationship to the internal and external environment. However, in recent years rapid advances in the medical sciences have fostered a degree of specialization and compartmentalization that has made difficult the teaching of a comprehensive approach to an understanding of man. This difficulty has received much attention from individual educators and groups¹⁻⁴ with a view toward reversing this trend.

Perhaps a major handicap in teaching an approach to the "patient as a whole" is our inability to present properly the dynamic relationships among the various forces operative within and upon the organism at any one time. Gregg⁵ has epitomized the problem in a discussion of multiple causality of disease by stating that, "Almost by definition an organism is an association of organs so intimately related that no part can be changed without changing in some way and in some measure all the others. . . . It is intellectual weakness that prompts us to ascribe a given result to only one sufficient cause. We ignore the value of suspecting that a result may be due to a convergence of several 'causes' which separately or in some

other sequence will not produce the result we seek to explain. This tendency to overlook convergent or multiple causation seduces us as an unrecognized temptation in our enthusiasm as teachers to make things 'clear'."

We wish, therefore, to present a visual conceptual scheme which we have found useful in teaching as a form of graphic recording of our understanding of individual patients and disease processes. We have for some time recognized that a three-dimensional representation of the interrelationship of factors acting upon the individual at any moment might be feasible. However, three-dimensional models are not simple to construct and are not as readily available as the two dimensions of a chart or blackboard.

We have formulated a representation of the equilibrium of forces that represents health. Deviations from health may be represented as disease processes of varying severity. As Engel⁶ has stated, "Health represents the phase of adjustment, disease the phase of failure. When a stimulus is encountered the organism must deal with it regardless of its source. If the capacity of the organism to deal with the stimulus is adequate, no disruption of equilibrium occurs and a state of health persists. If the stimulus cannot be dealt with, we recognize it as a stress which now upsets the previ-

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Total Health—A Conceptual Visual Aid

TABLE I

K _a	Condition	Examples
100	Optimum health	
90		
80	Marginal health	
	Requires active medical treatment and/or observation but no limitations on life activities	Minor dermatological lesions; Cardiac Class I; Psychoneuroses, moderate severity
70		
	Moderate limitation in daily activity, can care for own needs	Minor fractures; Cardiac Class II; Psychomatic disorders, moderate severity (e.g., peptic ulcer)
60		
	Severe limitation in daily activity, can care for own needs	Cardiac Class III; Rheumatoid arthritis, moderate severity
50		
	Severe limitation in daily activity, cannot care for own needs	Far advanced tuberculosis; Senile dementia
40	Bedridden patients	Severe progressive muscular dystrophy; Cardiac, congestive failure; severe anorexia nervosa
30	Critical conditions	Advanced carcinomatosis; Severe diabetic acidosis
20	Pre-terminal	Renal failure; Acute leukemia

ous homeostatic balance and disease is the consequence."

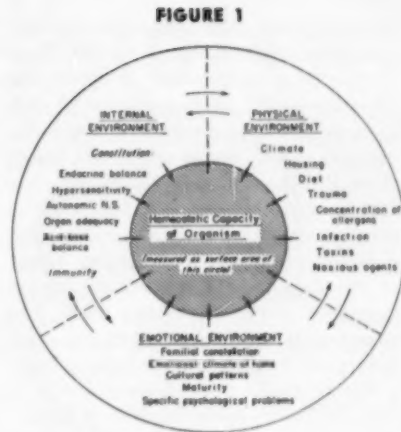
The Graphic Formulation of Health

We feel that an adequate construction of total health must be based on a concept of an equilibrium which results from the interaction of adaptive and disruptive forces within and without the organism. In our formulation, therefore, the individual is represented by a circular or an amoe-

boid configuration—ever changing in outline—the surface area of which represents the homeostatic capacity of the individual. If the surface area of this amoeboid pattern is adequate, an equilibrium—or state of health—exists. If the surface area is reduced, reflecting a loss of effective adaptive capacity, a state of disease exists. The individual is presented as the total of his environment. The consideration of environment is not limited to external factors, but also concerns the

internal milieu with which he must interact in terms of total adaptation. We are further concerned not only with those aspects of the environment of which the individual is clearly aware, but also the environment—internal and external—of which the individual can be made conscious only by such specialized techniques as hypnosis, psychoanalysis and narco-synthesis. Thus one could readily diagram the difference between the broad, mature person with great capacities, and the constricted, immature person with more limited capacities for adjustment. Physical adequacies and inadequacies could be represented equally graphically.

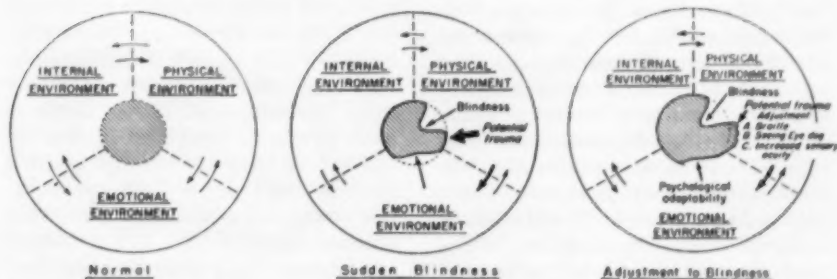
Quantitative representation of the individual's functional capacity may be expressed in this schema through the use of a coefficient of health, Kh. One could, for example, arbitrarily assign a normal range of 80-100 units of surface area to represent health. The figure 100 would represent a state of optimum health and homeostatic capacity, and 80 would represent a marginal state. Individuals within a range of 70-80 would require active medical treatment and/or observation, but would have no limitations on their life activities. From 60-70 would represent those with moderate



limitation in daily activity but who can care for personal needs; 50-60 severe limitation in daily activity but can still care for personal needs; 40-50 severe limitation in daily activity and cannot care for personal needs; 30-40 bedridden patients; 20-30 critical patients, and below 20, patients with disorders from which no return to life may be expected (Table 1).

By this formulation it is possible to present in a quantitative language the cumulative effects of multifactorial etiological agents in disease, and give such agents numerical values in proportion to their importance. Thus,

FIGURE 2



an individual with a Class II cardiac condition might have a Kh of 65. If he developed a respiratory infection his total Kh might be reduced to 55, but in graphically portraying this individual's health status one could easily show the greater severity of the cardiac lesion as compared to the respiratory infection while at the same time demonstrating the cumulative effect of the two. A patient with a single disease may run the entire scale. For example, a mild diabetic patient, well controlled by diet and/or insulin with a Kh of 75-80 may deteriorate to a preterminal diabetic state with acidosis and coma reflected in a Kh of 15.

This can be more clearly demonstrated by a diagrammatic presentation of a physical disability such as organic blindness (Figure 2) which leaves the individual with an irreversible gap in his ability to receive visual stimuli and thus reduces his capacity for adaptation. His Kh would be approximately 50. Whether this reduction of homeostatic capacity remains relatively constant at this new level for this individual depends on his ability to maintain and supplement his surface area of total health by compensatory development elsewhere, and on his ability to withstand any further loss of area due to the handicaps of his disability. This can be demonstrated in the diagrammatic presentation by a heavy arrow in the physical environment representing the increased hazard of trauma. This individual might develop some compensatory adjustments through the learning of braille, securing a seeing eye dog, increasing acuity of other senses and some degree of emotional recovery. It is conceivable that by these developments this individual's Kh can be raised to 65-70 and relative independence. Note that the likelihood of impending trauma (repre-

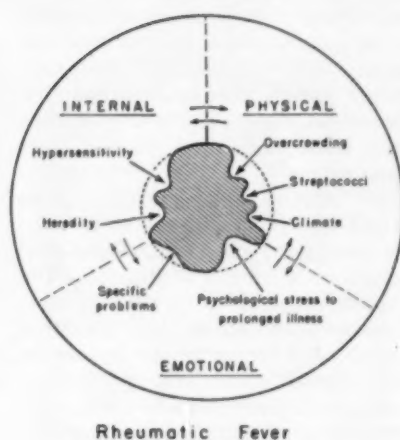
sented by the arrow), although still present, has been minimized.

If this same individual could not withstand the emotional shock of blindness, and was unable to adjust to that disability, the added depression and exaggeration of existing psychological difficulties might serve further to reduce the Kh to 40 and helplessness. Here we also deal with the problem of secondary gain in illness such as the sudden, seemingly correct, satisfaction of dependency needs of the individual. Secondary gain serves to block independence, and to remove the tremendous drive necessary to overcome handicaps and achieve independence. We are then speaking of the interaction of the unique abilities of an individual with his environment.

Environmental Factors

To continue with our formulation, we must define "environment" as presented in the outer circle. While it is possible to think of this environment in general terms as having the scope of infinity (and therefore perhaps represented without a limiting outer circle), we use a circle to indicate that the forces which mold a person in health and disease are, as these are dealt with by the clinician, for that person somewhat circumscribed. The arrows of force indicate constant pressure and counter pressure at all points of contact to indicate the dynamic nature of the equilibrium (Figure 1). While we recognize fully the interdependence of all of these environmental forces, for purposes of clarity (and somewhat arbitrarily) we have divided the environment into the physical environment, the emotional environment and the internal environment. The relationships among these environmental fac-

FIGURE 3



tors is portrayed by intercommunicating arrows which may be more or less heavily weighted in different individuals.

Since so much of the individual's total health depends upon intra-organismic forces and counter forces, we have externalized this aspect of the person to more clearly diagram the interaction. Thus a soldier in physical and emotional stress (e.g., in combat) reacts not only to the external stress situation, but also to the tremendous autonomic and hormonal response evoked by the situation. We are here not only implying Selye's concept of stress, but also the individual's awareness of his pounding heart, dyspnea, etc. We are thus particularly concerned with endocrine balance, autonomic balance, enzyme systems, hypersensitivity, organ adequacy, acid-base balance and immunity. It is apparent that genetic or constitutional factors are of special import in this consideration.

Within the term physical environ-

ment we include climate, diet, location of the home, physical adequacy of the home, crowding, play space, physical trauma, concentration of allergens, concentration of bacteria, virus and other organisms of pathogenic importance and the presence of noxious agents and toxins. Many factors listed above such as diet, location of the home, crowding, etc. are reflections of social and economic factors within the environment. This listing serves to indicate rather than to complete the category described.

Under the category of emotional environment we would include the familial constellation, the emotional climate of the home, peer group relationships, economic stress, school stress, cultural patterns, and their attendant anxieties. We are also dealing with factors such as specific psychological problems and the degree of maturity of the individual. By the latter we mean the individual's sexual maturity, adaptive maturity, work capacity, and his capacity to participate constructively in familial and community affairs which we regard as basic to maturity.

These divisions are arbitrary ones and communicate with each other. Thus, physical trauma produces effects of an emotional nature and may well alter certain aspects of the internal environment directly and through further reflection of emotional changes. Psychosomatic medicine has well demonstrated that emotional forces can alter internal environment, and may well alter the potentialities of the physical environment (accident proneness, etc.). It is in fact this very point of totality of interrelationship which we wish to stress, for only by appreciating this can the student be taught to think of the individual as a whole responding

in a myriad of ways to any specific stimulation.

Etiology and Course of Diseases

This schema aids not only in the description of the complex etiology of various diseases, but also indicates how a given disease runs its course in an individual and is altered by therapy. For example, let us consider rheumatic fever. Climate, overcrowding, hemolytic streptococcal infection, hypersensitivity and heredity have been implicated. An individual living in an overcrowded area, in the north, where there is an increase in the incidence of streptococcal infections may have a transitory but significant loss in homeostatic capacity as reflected in surface area in the diagram. If the streptococcal infection is superimposed upon an individual with an hereditary predisposition, and hypersensitivity to the streptococci, this further restriction of area represents the clinical state of rheumatic fever (Figure 3). The progress of such an individual could be observed by charting his cardiac disability, his removal to a convalescent hospital and rehabilitation center as well as his response to antibiotic therapy.

As another example, consider a

patient with a diagnosis of bronchial asthma. Although we are dealing with an allergic phenomenon depending upon concentration of allergens and antigen-antibody reaction other causative factors may be involved. The emotional aspects of the disease have long been recognized. It has often been referred to as the "birthday disease" because of the frequency with which allergic children have asthmatic attacks provoked by the emotional stress of a sibling's birthday. The further constriction of effective surface area caused by the emotional stress (and its particular impact on the internal environment) limit the adaptive capacity of the child sufficiently to produce clinical manifestations (Figure 4). Therapy may be pharmacologic, psychologic, or change in physical environments or a combination of all three. In any event success implies return to the previous, admittedly marginal health status. The representation of the clinical course of a group of allergic children is under way and will be presented in the future.⁷

For the final example of a classic disease state of multiple causality, we shall use the one most clearly studied from its psychosomatic aspects—peptic ulcer. Among the etiological

FIGURE 4

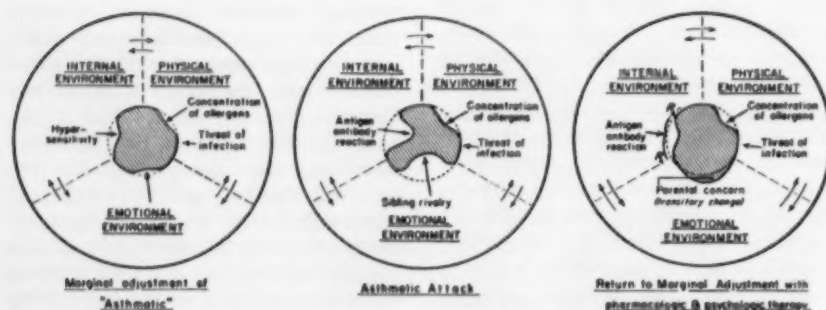
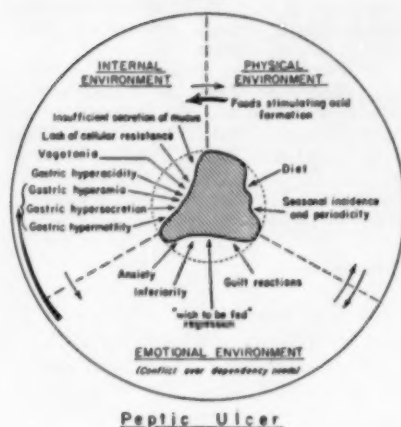


FIGURE 5



factors isolated are strongly acid gastric juice, lack of cellular resistance of the gastric mucosa, insufficient secretion of mucus, hyperactivity of the vagus nerve, seasonal aspects, periodicity and dietary factors. Direct observations by Wolf and Wolff¹ indicate that the gastric mucosa reacts with hypermotility, hyperemia, and hypersecretion to anxiety and a sense of resentment. The work of Alexander, French, et al² indicates that the ulcer is a result of the physiological processes set into motion by conflicts over strong dependency needs. They indicate that the ulcer patient is characterized by unconscious receptive tendencies which under appropriate circumstances cause in him a sense of inferiority and a guilt reaction. The regressive elements of the conflict are described as a "... wish to be fed." In our diagrammatic representation (Figure 5) we would like to call attention particularly to the changes in the internal environment of hypermotility, hyperemia, and hypersecretion in response to anxiety and resentment as described by Wolf and Wolff. We believe that by

the use of this schematic presentation one is less tempted to ignore the multiplicity of factors operative; as a consequence there is less of a tendency to oversimplify to the detriment of the patient. By presenting graphically the causative factors affecting the patient, it becomes more readily apparent that therapy too, if it is to be effective, must consist of a multiple approach to medical and/or surgical measures, dietary management, and psychotherapy. The interrelationships of these therapies can be rendered clear by the same diagrammatic representation.

Summary

To balance the trend toward specialization and compartmentalization fostered by rapid advances in the medical sciences, it is desirable to emphasize a comprehensive approach to the understanding of man and his relationship to his environment in health and disease. With this in view, a quantifiable, graphic schema is presented which permits a presentation of the dynamic relationships among the multiplicity of types of forces operative upon and within the organism at any given moment. This technique has been found useful in teaching and for the graphic recording of our understanding of individual patients and disease processes.

REFERENCES

1. ALLEN, R. B.: "Medical Education and the Changing Order," The Commonwealth Fund, New York, 1946.
2. "Widening Horizons in Medical Education," The Commonwealth Fund, New York, 1948.
3. "Psychiatry and Medical Education," American Psychiatric Association, Washington, 1952.
4. Conference of Professors of Preventive Medicine. Colorado Springs, 1952.

Journ. Med. Edu. Vol. 28, No. 10, Part 2, October 1954.

5. GREGG, A.: "Multiple Causation and Organismic and Integrative Approaches to Medical Education," Conference on Psychiatric Education. American Psychiatric Association, 1951, Washington.

6. ENGEL, G. L.: "Homeostasis, Behavioral Adjustment and the Concept of Health and Disease," "Mid-Century Psychiatry," edited by GREINER, R. R. Charles C. Thomas, Springfield, 1953.

7. BARRON, S. H., RICHMOND, J. B. and LUSTMAN, S. L.: "A Multifactorial Approach to Bronchial Asthma in Children." In preparation.

8. WOLF, S. and WOLFF, H. G.: "Human Gastric Function, An Experimental Study of a Man and His Stomach," Oxford University Press, New York, 1953.

9. ALEXANDER, FRANZ, FRENCH, THOMAS M., et al.: "Studies in Psychosomatic Medicine," The Ronald Press Company, New York, 1948.

CORRECTION

In the April issue of this Journal an error occurred on the first page of the report, "The Study of Applicants." The correct statement reads: "In the year under report there were 48,586 applications filed by the 14,678 individuals. The medical schools had almost 40,000 fewer applications to consider than they acted on in 1949-50."

The statistics reported are in all cases limited to applications acted upon and do not include completed applications filed but withdrawn before action was taken. One medical school points out, for example, that it had 251 completed applications withdrawn before the committee on admissions took action on them.

Initial Orientation of Medical Students

DAVIS G. JOHNSON

DEVELOPED IN RESPONSE to a definitely felt need, the 1952 orientation program for entering medical students at the State University of New York at Syracuse was rated as being "of great value" by 95 per cent of those participating.

This sample finding of the program described in detail below is one more indication of the need for orienting the new medical student. As reported by the Survey of Medical Education (1; p. 333), "The transition from college to medical school is apparently sharp and difficult for most students."

At the undergraduate level, the importance of comprehensive orientation programs has long been recognized and practically all entering students now benefit from such help.^{3, 5} At the medical college level, only one published report of orientation programs was discovered—namely a report by Peery and discussants⁴ which describes several programs developed during the 1940's.

The program described below is shorter, and apparently somewhat more personalized and informal than most of those previously reported. Although it is entirely possible that other medical schools have independently adopted similar programs for

themselves, it was felt worthwhile to report this program for comparative purposes.

In addition to offering a description of the orientation program itself, this report also emphasizes: (1) its cooperative development and (2) its systematic evaluation. For in these two techniques lie important potentialities for improving many phases of medical education.

Preliminary planning of the Syracuse program began in the fall of 1951 and extended until its adoption in September 1952. In line with current trends in college administration² the development of the program was a cooperative one and included the joint efforts of all of the groups indicated in Exhibit A.

It should be noted that the students themselves played a major role in both the planning and execution of the program. The first step in its execution, for instance, was to assign a senior medical student to every three freshmen and to have this "senior guide" write personal letters of welcome during the summer to each of his freshman "guides."

The orientation program proper is outlined in Exhibit B.

In order to systematically check on the value of the above program, the 77 freshmen and 25 seniors who had participated were asked to evaluate their experience approximately

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Initial Orientation of Medical Students

Exhibit A—Development of Program

GROUP	MAJOR CONTRIBUTION
1 Student Body as a Whole	Indicated need on questionnaire
2 Faculty as a Whole	Indicated need on questionnaire
3 Faculty Committee on Student Affairs	Devised student opinion questionnaire Outlined suggested program
4 Student Council	Modified suggested program
5 Student Honor Societies	Administered questionnaire to students Volunteered to return to school early to serve as senior guides to freshmen
6 Faculty Council	Approved program with slight modifications
7 Faculty-Student Association	Allocated money to finance program
8 Student Personnel Office	Obtained faculty opinion Coordinated administration of program

a week after the orientation period. Replies were received from a total of 92 students (71 freshmen and 21 seniors). The results are those indicated in Exhibit C.

To simplify the table, the figures have been combined for freshmen and seniors. It is interesting to note, however, that in general, the seniors rated the program even higher than did the freshmen.

Analysis of Exhibit C indicates that all phases of the program were rated

as being of either "great" or "moderate" value. Looking at the rank order listing of features rated, it is interesting to note that the senior guides were considered by far the most valuable feature. This was felt to be a particularly significant finding in view of prior questions raised by several faculty members concerning the possible inappropriateness of a "big brother" approach at the graduate school level.

Reasons for the high rating of the

Exhibit B—Content of Program

FIRST DAY

- 1:30 P.M. Freshmen meet senior guides
and pick up packets containing name tags, student bulletins, registration materials, etc.
- 2:00 P.M. Convocation
Welcome by dean
Welcome by president of student council
Talk on student personnel services
Illustrated lecture on the history of the college
- 4:00 P.M. Reception
For freshmen, senior guides, administrative officers and first-year faculty.

SECOND DAY

- 8:30 A.M. Registration
- 11:00 A.M. Introductory Clinic
Presentation of diabetic patient and discussion of need for basic sciences as background for clinical training
- 1:00 P.M. Luncheon
for freshmen and senior guides
- 2:00 P.M. Guided tour
and discussion with senior guides (tour mainly of Basic Science Building, including library and other facilities).

senior guides are suggested by the following quotations from the free comment section of the evaluation form:

"No faculty member can be as candid as a student." "A student understands the attitudes and doubts of the entering student and can present the most important information." "The large number of guides insured that all facts reach the freshmen on a personal basis."

The highly favorable overall evaluations may also be illustrated by the following quotations:

Concerning the length of the program, the following comment is quoted. "It was neither too much nor too little. I hope it will never be any longer than it was, nor of lesser quality."

A final quotation, interpreted by the author as attributable to the co-operative planning approach, is the following: "The attitude of all involved in the endeavor . . . was excellent. This attitude 'made' the entire program." When executing a program we ourselves have helped plan, our attitude tends to be much more en-

Exhibit C—Evaluation of Program

Features Rated (in rank order)	Of no value	Of little value	Of moderate value	Of great value	Total no. replies
1. Senior guides	0	1	3	(86)*	90
2. Guided tour	0	0	16	(73)	89
3. Intro. clinic	0	1	20	(67)	88
4. Convocation	0	2	38	(52)	92
5. Student bulletin	0	4	(50)	38	92
6. Luncheon	0	6	(45)	39	90
7. Reception	1	5	(51)	33	90
Overall rating	0	0	4	(84)	88

*Parentheses indicate median ratings of features

"The program was of great value in helping us overcome our feeling of strangeness. It also made us aware of our goals for the next four years, especially this first year. Moreover it gave us the feeling that the faculty is really concerned with our welfare."

"The program this year was a wonderful help in getting adjusted to not only the school but to the city. The overview of the school and its facilities make it much easier to see exactly our position in the school. Thanks a lot."

"Without the orientation program I can see where an incoming freshman could really get lost his first few weeks. It is a very good system of transition and indoctrination. Keep it up."

thusiastic than if the plan has been imposed upon us.

Although the above quotations are admittedly among the more favorable, it should be noted that no really unfavorable comments were received, even though the evaluation sheets were not signed. Probably the least favorable comment received was, "Well conducted orientation program; allowed to drag at a few places."

As a result of the above favorable evaluations, similar programs are planned for future years. Refinements in details will be made on the basis of continuing evaluation. Special steps have already been taken, for instance, to improve those features rated relatively weakest—namely the bulletin, luncheon and reception.

Initial Orientation of Medical Students

Individual medical schools interested in developing or improving their initial orientation programs will find further suggestions in the sources listed at the end of this article. A further logical "next step" for the medical schools as a group might be a systematic survey of orientation practices in all 81 schools and a summary of the strong features of the various programs. Although such a project would require considerable time and effort, it would undoubtedly prove of real value in further helping students get off to the best possible start in their medical training.

Summary

An attempt has been made to indicate the value of the initial orientation of medical students by reporting a program recently instituted at one medical school. In addition to describing the content of the program, emphasis has also been given to (1) its cooperative development and (2) its systematic evaluation.

The strongest features of the program were found to be (1) the senior medical students who acted as "guides" and (2) the introductory clinic.

As concerns the further improvement of medical student orientation, a systematic survey of orientation practices in all schools has been recommended.

REFERENCES

1. DIETRICK, J. E. and BERSON, R. C.: "Medical Schools in the United States at Mid-Century," McGraw-Hill, New York, 1953.
2. FALVEY, F. E.: "Student Participation in College Administration," Bureau of Publications, Teachers College, Columbia University, New York, 1952.
3. LLOYD-JONES, E. M. and SMITH, M. R.: "A student Personnel Program for Higher Education," McGraw-Hill, New York, 1938.
4. PEERY, T. M.: "Orientation Courses for Medical Students," *Journal Assoc. Am. Med. Coll.*, 24:65-74, 1949.
5. WRENN, C. G.: "Student Personnel Work in Colleges," Ronald Press, New York, 1951.

Use of the Rorschach Method in Medical Student Selection

IT HAS BECOME increasingly apparent in recent years that efficient prediction of successful performance in medical school must be based on instruments which take into account other variables in addition to intellectual adequacy. The personal interview generally has been geared to determining whether the candidate possesses those personal qualities which the interviewer feels are necessary for successful completion of the medical curriculum and for subsequent functioning as an effective physician. However, the interview has been demonstrated to be unreliable and is often impractical. To maximize the validity and reliability of the kind of information obtained in personal interviews, standardized interest and personality measures have been utilized.

The Rorschach test is one technique which has been given wide prominence. Its use as a screening device and substitute for the personal interview has been described in this journal^{4, 6} as has its function in differentiating successful from unsuccessful students after they have been admitted.⁷ Other studies have attempted to delineate the personality structure of medical students as a group, with the implication either that medicine attracts a certain type of individual or that medical school itself has a

LEONARD D. ERON

levelling effect on its students which produces similar kinds of personality structure in them.^{5, 8} The shortcoming of all these studies is either that: (1) data are not presented on a sufficiently large number of subjects to support the assertion, or that (2) control groups of students in other fields are not utilized. Thus we do not know how representative or distinctive these findings are.

It is the purpose of this study to determine: (1) whether the Rorschach protocols of medical students reveal basic similarities which can differentiate them from the protocols of another group of students, and (2) to determine whether the Rorschach protocols can differentiate the superior medical students.

Procedure

Individual Rorschach tests were administered to 35 male students in their third year of medical study.* This constituted the total number of males in the class. A similar number of Rorschach tests were administered to a group of third-year divinity students comparable in age, sex and education to the medical school sample. If there were any consistent pat-

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The Rorschach Method in Medical Student Selection

terns characteristic of this group of medical students it would be expected that they would emerge when comparisons were made with another student professional group at a similar stage in their education.

In the second part of this study a comparison was made between the Rorschach records of the most and least successful students. For this comparison the 10 students who were elected to AOA were compared with the 10 students whose grades for the third clinical year (average of grades in internal medicine, surgery, psychiatry and pediatrics) were the lowest. Actually the disparity between the two groups was not too great since all performed adequately enough to graduate the following year. It was felt, however, that there were sufficiently real and demonstrable differences in the clinical performance of these students so that differentiating grades could be assigned to them. All students in the lower grade group had average grades of "C."

In the statistical analysis all the separate scores and combination of scores* ordinarily used as a basis for Rorschach interpretation were compared according to appropriate statistical procedures which take into account the non-normal distribution of Rorschach scores, the inequality of units and the dependence of the individual scores on the total number of responses. This was done by plotting each variable against the total number of responses, drawing a line fitting the medians of the columns, and then comparing by chi square the proportion of cases in each group falling above and below the median, as recommended by Cronbach.³ In addition, three expert judges tried to

sort those records which belonged to the medical students from those which belonged to the divinity students on the basis of the protocol itself without reference to identifying data.* In the same way they then tried to select the 10 best and the 10 poorest medical students. This part of the experiment was done in order to overcome the objection that using only the formal scoring in such a comparison sacrifices the essential flavor of the records on the basis of which ordinary clinical judgments are generally made. For the first part of this sorting task the judges were each given seven folders in which there were 10 protocols. They were told that in each folder there were five medical student records and five divinity student records which they were to sort as best as they could according to whatever standards they wished. For the second part of the task they were given two folders, each containing 10 records, five of which were contributed by the top men in the class and five by the poorest men in the class. They were also told to sort these. The scoring of each response and a summary profile accompanied each record. The judges were invited to refer to these or not as they saw fit. Previous to the actual sorting, which was done independently by each judge, the three judges met for an informal discussion of how they felt medical and divinity students would differ in personality structure, although no reference was made as to how these differences would be reflected in their Rorschach records. At this time also they were apprised of the current literature concerned with Rorschach performance of medical students and each had the opportunity to read the work

*The author administered and scored all the Rorschach tests according to the Beck procedure.

*Judges were Drs. Ethelyn Klatskin, Edith Lisansky and Sarah Schaefer.

that had already been published. This session was held to help insure that all judges approached the task with somewhat similar criteria.

Results and Discussion

Formal Scoring. Of all the individual scores and combination of scores on which the medical and divinity students were compared there was a statistically significant difference (beyond the .05 level of confidence) in only two, many fewer than would be expected even by chance in the total number of explicit and implicit comparisons made. Thus, when the total number of responses are controlled as previously described, the medical students contribute significantly more popular responses ($P = .01$). Also more medical students have a wide discrepancy between reaction time to chromatic and achromatic cards than do the divinity students ($P = .01$), although the trend in both groups is for chromatic reaction time to be longer than achromatic reaction time. In addition, there was no significant difference between the two groups in the frequency of occurrence of the various criteria for color shock, which refers to the tendency of a subject to react differentially to those cards which contain color figures and which has traditionally been accepted as a phenomenon of neurosis.¹ The criteria used in the determination of the presence of color shock in this study are adapted from Beck¹ and are identical with the ones utilized by Molish in his study in which color shock was said to be characteristic of medical students.⁵

Thus it would seem that on the basis of this analysis of the formal scoring of the Rorschach records there is no difference beyond what would be expected by chance between this

group of medical students and a comparable group of divinity students. The characteristics which some investigators describe as typical of medical students are not seen as distinguishing them from at least one other professional group. There is no difference in the level of productivity, amount of intellectual drive, organizational energy, level of form accuracy, originality of interest content, imaginative talent; no difference in the presence of color or shading shock, all of which Molish has said to be characteristic of medical students.⁵ Nor is there any difference in the personality constellation of "coarctation," an inhibition of color and movement responses, which has been related to obsessive-compulsive and depressive adjustments, and which Brosin found as typical for a large number of medical students.² It seems, then, that the Rorschach method cannot be used in this way to delineate "the typical personality structure" of the medical student, assuming there is such, unless it can be shown on the basis of other criteria that medical students and divinity students do actually have similar personalities which distinguish them from individuals in other professional groups. In other words, if it can be shown that medical and divinity students have similar personality structures, this lack of results could not be taken as evidence that there is no "typical" medical student record. However, it is unlikely that there is any evidence for such an assumption.

The comparison of the best and poorest medical students according to formal scoring categories likewise reveals no significant difference in any category or combination of categories. However, there is a tendency for the better students to give more indications of differential reaction to the

black-white cards (shading shock) than the poorer students, although this is not a significant difference. This type of reaction to the blots is usually taken as an indication of deep-seated anxiety and it has been suggested that it differentiates over-achieving from under-achieving medical students.⁷

Qualitative Comparison: The three judges were able to differentiate the records of the medical students from the divinity students to a degree considerably better than chance when the matching was done on a purely qualitative, intuitive basis. Judge A made two errors in four folders and no errors in three folders; Judge B made two errors in six folders and no errors in one folder; Judge C also made two errors in six folders and no errors in one folder. The probability of making only two errors in any one folder is approximately one in 10, and to do as well or better in all seven folders is much better than could be done by chance.* However, 26 different subjects in all (27 per cent) were misclassified by one or more of the judges; three judges making the same error in one case, and two judges making the same error in six cases.

After the sorting task, all judges reported that the basis of their scoring was primarily in content or interest pattern and only secondarily in terms of structure; e.g., constriction, compulsivity, etc. When precise anatomical descriptions were given or specific medical terminology used, records were classified as "medical." Similarly, records were classified as

"divinity" if they included such content as descriptions of religious articles, vestments, etc. The corollary to this criterion was that records were classified as "divinity" if they included extremely vague or inaccurate anatomy responses. Thus it seems that even with this more global approach to the Rorschach records only superficial consistencies emerged. There was nothing apparent in basic personality structure, defenses, etc., which differentiated these two groups.

The sorting was considerably less successful when the judges tried to identify the most and least successful students. Judge A made six errors in each folder; Judge B, four in each folder; and Judge C, six errors in one folder and four errors in the second one. None of these sortings was performed on a better than chance basis. The judges felt that this was the more difficult of the two tasks they had been given. It was a difficult decision to make since it is uncertain what the relationship is between personality adjustment and academic success; i.e., how much disturbance can be tolerated in or is necessary for achievement. Recent research has shown that actually individuals with a high degree of anxiety tend to receive better grades than do students with less anxiety.⁷ The results obtained in the comparison of the formal Rorschach scores tend to lend support to this finding since the better students give more evidence of shading shock which, as pointed out above, is a heightened sensitivity to anxiety-producing stimuli. This result was not statistically significant and is merely suggestive.

Conclusion

It would seem that the use of the Rorschach test in the selection of

*There are 252 possible ways of sorting the protocols in each folder into five divinity and five medical students ($C_{5}^{10} = \frac{10 \cdot 9 \cdot 8 \cdot 7 \cdot 6}{5 \cdot 4 \cdot 3 \cdot 2 \cdot 1}$) and the possibility of getting eight correct for any one folder is $C_{1}^{5} \cdot C_{4}^{5} = \frac{25}{252}$. The possibility of doing as well or better in seven folders is $\left(\frac{25}{252}\right)^7$.

medical students or in the prediction of their success in medical school is not justified, since thus far its success in differentiating medical students from any other group of professional students has not been demonstrated, nor is there any clear indication of how good and poor students differ on the test. This should not be surprising, for to use this technique in student selection is to go far afield from its original purpose, which was to gain an understanding of thinking disturbances in maladjusted persons. Its use in the differential diagnosis of such individuals is not disputed here and, as a tool for separating out those applicants who are suffering from behavior disorders or who might potentially develop such, it may have merit. There is insufficient evidence, however, to warrant its continued use as a selection device in medical schools on more than an experimental basis.

REFERENCES

1. BECK, S. J.: "Rorschach's Test." Vol. I: Basic Processes. Vol. II: A Variety of Personality Pictures. Grune and Stratton, New York, 1946.
2. BROSN, H. W.: "Psychiatry Experiments With Selection," *Soc. Serv. Rev.*, 22: 461, 1948.
3. CRONBACH, L. J.: "Statistical Method Applied to Rorschach Scores: A Review," *Psychol. Bull.*, 46: 393, 1949.
4. HARROWER-ERICKSON, M. R.: "The Rorschach Test," *Journ. Assn. Am. Med. Coll.*, 19: 193, 1944.
5. MOLISH, H. B., MOLISH, E. E., and THOMAS, C. B.: "A Rorschach Study of a Group of Medical Students," *Psychiat. Quart.*, 24: 744, 1950.
6. MULLEN, F. J.: "Selection of Medical Students," *Journ. Assn. Am. Med. Coll.*, 23: 163, 1948.
7. SHOEMAKER, H. A. and ROHRER, J. H.: "Relationship Between Success in the Study of Medicine and Certain Psychological and Personal Data," *Journ. Assn. Am. Med. Coll.*, 23: 190, 1948.
8. WAGGONER, R. W. and ZIEGLER, W.: "Psychiatric Factors in Medical Students Who Fail," *Am. Journ. Psychiat.*, 103: 369, 1946.

Editorials and Comments

State Residency Restrictions

THE PROBLEM CREATED by the common practice of limiting admission to a state-owned medical school to residents of that state has been an acute one since the termination of World War II. Before the war most of our state-owned schools had recognized the cultural advantages of having a cosmopolitan student body, had acknowledged their indebtedness to the other medical schools of the country who were admitting students irrespective of their residence, and reserved approximately 10 per cent of the places in their entering class for out-of-state students. At the war's close there was such a large backlog of acceptable applicants who were state residents that the majority of the state-owned medical schools ceased admitting out-of state residents altogether.

As the result of this unfortunate policy we find some states in which 70 to 80 per cent of the students applying for admission to medicine are accepted, while the average for all states is less than 52 per cent. The Medical College Admission Test's records, of course, are found to be lower in the schools that restrict their applications to residents of their state.

If the total number of students applying for admission to medical schools continues to decrease (it has decreased from 24,434 in 1949-50 to 14,678 in 1953-54, the admissions committees of state-owned medical schools definitely will have to make such decisions as: will they retain the strict state residency restriction and complete their quota with low standard students? Will they retain the restriction and leave the quota unfilled if there are not properly qualified state residents to fill it, or will they fill their quota with out-of-state students when they have already given preferential admittance to all qualified state residents applying?

It is of great interest to note that the decision in at least one of the state-owned schools has been to return to the practice of accepting out-of-state students rather than leaving their entering class quota unfilled or filling it with state residents who are not fully qualified.—D. F. S.

An Important Warning

APPARENTLY INFLUENCED BY the rapid decline in rates for reported primary and secondary syphilis—from 75.68 per 100,000 population in 1947 to 6.27 per 100,000 population in 1953—the federal government has reduced its appropriation for venereal disease control from \$9,850,000 in 1953 to \$5 million in 1954, with a proposed cut to \$2,300,000 for 1955.

In a letter over the signatures of their presidents and secretaries, three national organizations—the American Social Hygiene Association, the Association of State and Territorial Health Officers and the Amer-

ican Venereal Disease Association—warn that such a sudden reduction in federal support is unwise and jeopardizes the success of the past years undertaken in high hopes and carried forward to this point with brilliant success.

Documenting their statements with appropriate tables, these organizations point out that “despite great strides in venereal disease control, complete control is not imminent,” and express the belief that “the continuing program for the next several years should intensify specific control efforts by identifying and reducing pockets of high resistance, emphasizing early primary and secondary syphilis, giving more attention to the latent aspects of syphilis, and concentrating more effort against gonorrhea.”

These associations unite in urging the federal government to take the following five steps now: (1) Resume its responsibility for venereal disease control. (2) Maintain as a minimum a \$10 million federal budget for venereal disease control until a thorough study of needs has been made by the Congress. (3) Recognize that despite decreases in the apparent number of venereal disease cases in the nation, we may not be finding more than a fraction of the cases that exist, particularly in areas where venereal disease is known to be highly prevalent. (4) Adhere to a long-term plan for reducing federal support for venereal disease control selectively and gradually, on the basis of local needs. (5) Meet the continuing need for grants to the states for venereal disease control.”

We are all seriously concerned about the national debt and the inability of our government to bring our annual federal expenditures within our annual federal income and gradually amortize that debt. All efforts bent to this all-important end merit the undivided support of all thinking citizens. From the facts presented by these associations, it would appear, however, that such severe and sudden reduction in federal support of venereal disease control might well prove a false economy in terms of health and welfare. Certainly a reconsideration of the whole problem is well justified before further cuts in federal aid in this important area are made.—D.F.S.

NEWS DIGEST

Heart Association Meeting

Representatives of affiliate and chapter heart associations throughout the country as well as physicians and research scientists attended the 30th annual meeting of the American Heart Association, at the Morrison Hotel, Chicago, March 29-April 4.

The week-long series of business meetings and heart program discussions culminated in a two-day scientific session of the association's newly formed Section on Clinical Cardiology. Dr. A. Carlton Ernestene, chief of medicine, Cleveland Clinic and Dr. Wright R. Adams, department of medicine, University of Chicago, alternated as chairman of the sessions.

Alpha Epsilon Delta Award

The first Distinguished Service Award of Alpha Epsilon Delta, the national premedical honor society, was presented to Dr. Aura E. Severinghaus, associate dean, faculty of medicine, Columbia University, for his outstanding contributions to premedical education. The award was presented on March 26, during the 10th national convention of the society, held at Indiana University.

Markle Scholars

The John and Mary R. Markle Foundation announced late in March the appointment of 25 scholars in medical science, all faculty members of medical schools in the United States and Canada. This was the largest number to be appointed in any year since the program began in 1948.

The fund has appropriated \$750,000 toward the support of these doctors and their research, to be granted at the rate of \$6,000 annually to the 25 medical schools where they will teach

and carry on their research. A total of \$3,950,000 has been appropriated by the fund toward the support of 136 doctors in 59 medical schools. The 25 scholars were selected from 60 candidates nominated by deans of medical schools, each of whom presented a five-year program for the candidate, indicating the school's plans for his progress.

AWMA Awards

The American Women's Medical Association will present a \$100 cash award to each woman medical student who graduates in 1954 as the top ranking student of her class. This is the third consecutive year these awards have been presented.

The 1953 awards went to Dr. Lois C. Lillick, New York Medical College; Dr. Sylvia Griem, University of Wisconsin Medical School; Dr. Barbara Bates, Cornell University Medical College, and Dr. Barbara Anne Burke of Women's Medical College of Pennsylvania.

TV Program on Arthritis

The second in the 1954 spring series of "March of Medicine" network telecasts, presented by Smith, Kline & French Laboratories and the American Medical Association, will bring to a national audience a glimpse of current research on arthritis and rheumatism.

Scheduled for Thursday, April 29, at 10 P.M. EDT, the program will be carried over 78 NBC television stations. By means of live telecasts and film, the program will visit medical research centers throughout the country where work is under way on these two degenerative diseases.

This program continues a series which has included shows on heart

disease, cancer, the AMA clinical session, and lastly, overweight. On June 24, a special report will be telecast from the scene of the annual meeting of the AMA in San Francisco.

American Psychiatric Association

The annual meeting of the American Psychiatric Association will be held May 3-7 in St. Louis, at the Kiel Auditorium. Several thousand of the APA's 7,600 members are expected to attend. Over 100 papers on recent developments in psychiatry will be presented, together with psychiatric films and exhibits.

Non-members are welcome to attend the scientific sessions. A \$5 fee covers admission to scientific meetings throughout the convention.

Wayland Delano Wilcox

Wayland Delano Wilcox, 78, since 1915 editor and manager of the college department of Lea & Febiger, publishers, died March 9. He was a graduate of the University of Chicago, from which he received B.D., Ph.B. and Ph.D. degrees. Mr. Wilcox is survived by his wife, Agnes, and a son, J. Lyon.

Runyon Fund

The Damon Runyon Memorial Fund for Cancer Research allocated \$52,800 in institutional awards for the month of March. This brings the total funds awarded to \$7,620,286 in 429 grants.

Columbia University, the Utah State Agricultural College, the University of Chicago and Duke University were recipients of the March awards.

Passano Foundation Award

Dr. Homer W. Smith, professor and chairman, department of physiology, New York University College of Medicine, has been selected as the recipient of the \$5,000 Passano Foundation Award for 1954.

On June 21, during the American Medical Association convention in San Francisco, a reception and dinner will be held in honor of Dr. Smith. The award is being made for

his many contributions to the knowledge of the physiology of the kidney.

Rutgers Institute of Microbiology

The anniversary of the discovery of streptomycin in an obscure and crowded Rutgers University laboratory 10 years ago will be marked on June 7 with the dedication of the new \$3,500,000 Institute of Microbiology. Royalties from the manufacture of streptomycin have amounted to more than \$4 million, of which 80 per cent have been assigned to the Rutgers Research and Endowment Foundation. These funds were used for construction and equipment of the new laboratory.

Law-Medicine Center

A three-fold program of teaching, research and publication is under way at the new Law-Medicine Center at Western Reserve University in Cleveland.

Under the direction of Oliver C. Schroeder Jr., the center is offering two full-length legal medicine courses and an intensive one-week course in police science is being planned for June 21-26.

A study on homicide in the greater Cleveland area is the new center's first research project. Completing the three-fold program is a series of publications in the legal medicine field. The first volume in the series will be "The Physician in the Courtroom," to be published by the Western Reserve University Press this spring.

Social Work Forum

The 81st Annual Forum of the National Conference of Social Work will be held May 9-14 at Convention Hall, Atlantic City. The central theme of the forum will be "Social Welfare—1954—Inventory and Opportunity."

In addition to the regular meetings, there will be special lectures and 150 consultation and exhibit booths, where social work schools, publishers, governmental agencies and manufacturers will be represented. Approximately 30 pertinent films are scheduled to be shown during the forum.

International Surgical Congress

The International Medical Surgical Congress will be held in Turin, Italy, May 29-June 6. There will be three international expositions: Architecture of the Sanitary Arts, Medical-Scientific Film Festival and Scientific Exposition.

Nineteen hospital architects who work in Finland, France, Switzerland, United States, England, Germany, the Netherlands and Brazil have been invited to exhibit their work.

AHA Executive Director

Dr. Edwin L. Crosby, director of the Joint Commission on Accreditation of Hospitals and immediate past president of the American Hospital Association, has been appointed executive director of that association.

Dr. Crosby succeeds George Bugbee, who resigned as of May 1 to become president of the Health Information Foundation. Dr. Crosby also served as research director and a member of the medical task force of the second Hoover Commission on the organization of the executive branch of the government. Before joining the commission, Dr. Crosby was director of Johns Hopkins Hospital, Baltimore.

Foreign Operations Appointments

Sherman Comings, a sanitarian of the Lowndes County Health Depart-

ment, in Valdosta, Ga., is scheduled to join the U. S. Operations Mission in Baghdad, Iraq, as a biologist.

Dr. Harold Frederiksen has been appointed to serve with the U. S. Operations Mission in Iran as a physician. Dr. Frederiksen has degrees from Vienna University, Liverpool University, Liverpool School of Tropical Medicine and Harvard University.

Keble B. Perine, on leave of absence as health officer for the town of Belmont, Mass., will join the U. S. Operations Mission in Pakistan as a public health sanitation advisor.

Albert L. Platz is slated to join the U. S. Operations Mission in Chelburi, Thailand, as a sanitary engineering consultant. After studying civil engineering at the Santa Rosa Junior College in California, he received the B.E. degree from Tulane University.

Sanford E. Shields, a Public Health Service officer, is scheduled to serve with the U. S. Operations Mission in Thailand as an entomologist. Commanding officer of the 24th Malaria Survey Unit in New Guinea and the Philippines during the war, he has been assigned to the Tennessee Department of Health at Nashville for the past seven years.

Robert E. Taylor has been assigned to the U. S. Operations Mission in Liberia as a sanitarian. He has served with the Sacramento City Health Department since 1949.

College Briefs

Albany

A new study of the ancient drug, colchicine, is being made under the direction of Dr. FRANK G. FERGUSON, chairman of the department of physiology. This strange drug, known as a treatment for gout for hundreds of years, is being re-examined to determine some of its other effects. Dr.

Ferguson has noted that the drug can produce changes in muscles which appear to resemble the muscular dystrophies that occur in humans. The work is being done under a Public Health Service research grant.

Chicago Medical School

A total of \$49,000 in new and renewed grants for research has been

received recently. Among these grants was a renewal of \$25,000 from the Public Health Service to Dr. PHILIPPE SHUBIK for continuance of the cancer teaching program. A new three-year grant of \$18,650 from the Atomic Energy Commission was awarded to Dr. HAROLD KOENIG for a study involving radioactive phosphorus.

U. of Chicago

"Tagged" colchicine, a drug derived from plants grown at the university's "atomic farm" is useful in showing chemical differences between cancer patients and normal individuals, according to a report made by EDWARD J. WALASZEK, fellow of the National Cancer Institute, to the Federation of American Societies for Experimental Biology, April 14 in Atlantic City.

The colchicine was derived from the autumn crocus, grown in air-tight greenhouses containing radioactive Carbon 14 in the form of carbon dioxide. In the cancer patients, only 0.2 to 6 per cent of the colchicine was excreted in an unchanged form, while the range in noncancer patients was from 15 to 50 per cent.

Cincinnati

Supplementing an \$87,566 grant given in December 1953, the National Foundation for Infantile Paralysis has awarded an additional \$67,840 to aid in polio research conducted by the university in conjunction with the Cincinnati Children's Hospital. The studies are under the direction of Dr. ALBERT B. SABIN, professor of research pediatrics.

University psychiatrists and surgeons are planning to launch for the first time in the United States a systematic study of the emotional problems of a large group of surgical patients to determine whether emotional and personal problems are playing any part in the patient's illness or response to illness. A \$12,000 grant from the Public Health Service will finance the study. Dr. WILLIAM A. ALTEMEIER, director of the department of surgery, and Dr. MAURICE

LEVINE, director of the department of psychiatry, will head the study.

The patients studied will not be those referred by surgeons for psychiatric consultation because of obvious psychiatric conditions, but will be those ordinarily handled by surgeons without psychiatric study.

Colorado

Construction has begun on a \$261,000 psychiatric outpatient clinic which will provide facilities for patients, both adults and children, who have emotional problems but do not require hospitalization. The two-story building will be constructed so that two additional stories could be added, if necessary in the future.

Dedication ceremonies for the Gerald B. Webb Memorial Building were held on March 12. The building was erected by the Colorado Foundation for Research in Tuberculosis in affiliation with the university, at a cost of \$150,000. There will be an extensive library on tuberculosis and diseases of the chest, and the research of the foundation and medical faculty in tuberculosis will be centralized in the new laboratory.

Emory

The centennial of the school of medicine will be observed on October 4 and 5, with a two-day celebration that will include a formal academic ceremony, addresses by Dr. STANHOPE BAYNE-JONES, Dr. ALFRED BLALOCK, Dr. JOHN F. FULTON, Dr. EVARTS AM-

NEW DIRECTORY PUBLISHED

The third edition of the Association of American Medical Colleges Directory is now available.

The new edition has been expanded in both size and scope. In addition to listings of institutional and affiliate institutional members and their administrative officers, it also contains names of department chairmen in 13 subject fields. Additional copies are available, at 50¢ per copy, from the Association headquarters, 185 N. Wabash Avenue, Chicago 1, Ill. A special price will be made for 10 or more copies ordered at one time for delivery at a single address.

BROSE GRAHAM, Dr. ALAN GREGG and Dr. CYRUS C. STURGIS, and the conferring of several honorary degrees. The Emory medical school grew from the Atlanta Medical College, founded in 1854.

Florida

The college of medicine expects to admit its first class in 1956, according to an announcement by Dr. RUSSELL S. POOR, provost.

The medical school, part of a comprehensive university health center, was given state legislative approval at the 1953 session and received a \$5 million appropriation for the medical sciences building. Dr. GEORGE T. HARRELL, formerly professor in charge of research at Bowman Gray School of Medicine at Wake Forest College, has been named dean of the college of medicine.

Georgetown

A total of \$30,113 in grants from the Public Health Service has been announced. The grants will be used for studies on retrolental fibroplasia, chemotherapy of essential hypertension, protein metabolism in the stabilized uremic unit and a renewal for a cancer training project.

Harvard

A Public Health Service grant of \$215,000 for a five-year study of the emotional disturbances of childhood has been awarded to the Judge Baker Guidance Center and Children's Hospital. This work will be closely related to the cooperative program of study in the department of psychiatry of the medical school. Particular emphasis will be placed on the role of aggression in children. The study will be directed by Dr. GEORGE E. GARDNER, clinical professor of psychiatry; SAMUEL WALDFOGEL, director of research at the Judge Baker Center and Dr. DANE G. PRUGH, psychiatrist at the Children's Hospital.

A possible relationship between modern infant incubators, used in caring for prematurely born babies, and blindness often found in later life

was analyzed recently by Dr. THEODORE H. INGALLS and Dr. NATESAIER PURSHOTTAM of the school of public health, in an article in the *New England Journal of Medicine*.

The retrolental fibroplasia results from lack of oxygen to the developing blood vessel system of the base of the eye. Curiously enough, the physicians report, the oversupply of oxygen in the modern incubator may bring about this lack, which it would be expected to prevent. The abnormal oxygen supply may affect the activity of enzymes which are necessary to the development of the eye.

Illinois

HERBERT B. MEGRAN was elected unanimously by the board of trustees to succeed PARK LIVINGSTON as president of the board, for a term of one year. Mr. Megran has been a member of the board for nine years.

The George Washington Honor Medal was awarded to Mrs. ANNA T. HOWARD, assistant professor of nursing at the university, by the Freedoms Foundation. The medal was presented for "outstanding achievement in helping to bring about a better understanding of the American way of life during 1953."

A Public Health Service grant of from \$14,600 to \$16,300 annually has been received for study involving induction and experimental therapy of mouse leukemia. Another Public Health Service grant of \$4,500 annually for five years will support an investigation concerning the development of tumor autonomy.

Kansas

Dr. DANIEL C. DARROW will assume his duties as Mercy Hospital professor of pediatrics of the school of medicine, beginning July 1. The Children's Mercy Hospital affiliated with the school of medicine last year, with a goal of improving undergraduate and postgraduate medical education in diseases of children.

Dr. Darrow will head the teaching and research program at Mercy Hospital and will spend most of his time



AN ARTIST'S conception of the new medical center, now under construction at the University of Missouri.

there. He was formerly professor of pediatrics at Yale University School of Medicine, and was the 1951 recipient of the Borden Award of the Academy of Pediatrics.

Dr. FRANK F. ALLBRITTEN JR. has been appointed professor of surgery and chairman of the department, beginning May 1. Dr. Allbritten was formerly associate professor of surgery of Jefferson Medical College and surgical director at the Barton Memorial division of the Jefferson Medical College hospital.

Dr. SANTIAGO GRISOLIA, assistant professor of physiological chemistry, University of Wisconsin, has been named the first McIlvain career investigator, effective May 1.

A grant of \$45,000 has been made by Community Studies, Inc., from funds made available by the trustees of the Frederic Ervine McIlvain Memorial Fund. The research will be done in the field of heart disease. Dr. Grisolia will receive an academic appointment in the school of medicine as associate professor of medicine and biochemistry. He will be a member of

the department of medicine and of the cardiovascular laboratory, with research space in the medical sciences building, designated as the McIlvain Laboratory.

Louisville

Dr. S. STEPHEN CHAPMAN, formerly instructor in the department of bacteriology and immunology at the Harvard Medical School, has been appointed associate professor of microbiology, effective July 1.

Medical Evangelists

The Multiple Sclerosis Society of Southern California has granted \$19,000 to the college for the establishment of a multiple sclerosis diagnostic and rehabilitation clinic. The clinic will be staffed on a part-time basis by a neurologist, psychiatrist, social service worker, nurse, and by a full-time physical therapist.

The Public Health Service and the Air Force have provided \$29,000 for the preparation of a monograph of "The Poisonous and Venomous Marine Animals of the World," by the school

of tropical and preventive medicine.

Dr. VARNER JOHNS, associate dean, has assumed the presidency of the alumni association and Dr. ELTON MOREL, assistant professor of medicine, was named president-elect.

N.Y.U.—Bellevue

The university medical center's institute of physical medicine and rehabilitation has received capital gifts totaling \$115,236.48. A contribution of \$65,000 was received from the James Foundation of New York, Inc. An additional \$25,000 was received from the Samuel H. Kress Foundation and \$25,236.48 came from individual donors. The institute is under the direction of Dr. HOWARD A. RUSK, who is also associate editor of the New York Times and president of the American-Korean Foundation.

State U. of N.Y.—Brooklyn

Dr. JEAN A. CURRAN, dean of the college of medicine, has been appointed the first professor of the history of medicine. Dr. Curran plans to develop "the historical perspective essential to an understanding of the progress in medicine."

Dr. ABRAHAM M. RABNER, formerly clinical professor in the combined department of neurology and neurosurgery, has been appointed professor and head of the division of neurology under the department of medicine. Dr. E. JEFFERSON BROWDER, who has been serving as professor and chairman of the combined department, will continue as chairman of a separate department of neurosurgery.

A new appointment as visiting professor of physiology from September 1, 1954, to August 31, 1955, has been awarded to Dr. SILVIO WEIDMAN, associate professor in physiology at the University of Berne, Switzerland. Dr. Weidman will succeed Dr. FRANS KLEYNTJENS, adjunct professor and acting chief of the department of neurology at Brussels University Hospital, who has been visiting professor in the department of physiology at the college since September 1953.

Dr. BENTON DAVIS KING, assistant

chief of anesthesia at the Brooke Army Hospital, Fort Sam Houston, Texas, will assume his duties as associate professor of anesthesiology.

Dr. JAMES O. PINKSTON, assistant dean of admissions, has been promoted to full professor of physiology. Associate professorships were awarded to Dr. JACK GROSS, in anatomy; Dr. FLORENCE M. STONE, in microbiology, and Dr. JEROME LESTER GILBERT, in pharmacology.

Pennsylvania

AIMS C. MCGUINNESS, dean of the graduate school of medicine, has been appointed clinical consultant for the new memorial hospitals of the United Mine Workers' Welfare and Retirement Fund. Dr. McGuinness will coordinate medical staffing arrangements for the 10 hospitals being built by the Memorial Hospital Association in Kentucky, West Virginia and Virginia.

After an extensive tour of Spanish hospitals and sanitariums engaged in the treatment of tuberculosis patients, Dr. ESMOND R. LONG has returned to the university's Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis. Dr. Long went abroad at the invitation of the Patronato Nacional Antituberculoso, the tuberculosis section of the Spanish government's department of health. The tour was made as a representative of the International Union Against Tuberculosis, which is holding an important meeting in Madrid in September.

A grant of \$31,432 has been awarded by the Commonwealth of Pennsylvania to the university for the initiation in the Philadelphia area of a medical program seeking solution of "the kindred problems attendant upon alcoholism."

The funds are being made available to the university by the division of alcoholic studies and rehabilitation of the state department of health. In connection with this program, a two-day forum was held April 28-29, with speakers on alcoholism and alcoholics, types of ther-

apy for alcoholics, types of rehabilitation and alcoholism and the community. The research program will be directed by Dr. WILLIAM C. STADIE, chairman of the department of research medicine; the educational programs are to be conducted under the direction of Dr. JOHN P. HUBBARD, chairman of the department of public health and preventive medicine.

Special exercises commemorating World Health Day, April 7, were held at the university under the auspices of the school of nursing. The day is sponsored by the World Health Organization of the United Nations.

Dr. HERBERT R. HAWTHORNE, professor of surgery and chief of the surgical service of the graduate hospital and of the American Hospital for Diseases of the Stomach, has been appointed chairman of the department of surgery in the graduate school. Dr. JOSEPH P. ATKINS, clinical professor of bronchology, esophagology and laryngeal surgery, has been named chairman of the department. Both appointments are effective July 1.

Rochester

A new slow-motion, stop-action movie projector designed primarily to aid in the interpretation of x-ray motion picture studies of the human heart has been developed in the radiology department of the school of medicine and dentistry.

Designed by SYDNEY A. WEINBERG, associate in radiology and Dr. JAMES S. WATSON JR., lecturer in radiology, the projector has a remote push-button control, can be reversed instantly and permits projection at film speeds as low as six frames per second.

Stanford

A \$210,000 grant from the Commonwealth Fund of New York will finance studies to explore possibilities for improving medical teaching at the school of medicine when it moves to Palo Alto.

Four committees, totaling 69 members from the faculty, alumni and

trustees of the university, and from bay area communities, are already at work on preliminary studies. Another committee is considering plans for the future use of the medical school's buildings in San Francisco. In addition to the social, financial and personnel problems of moving the medical school, the study is aimed at carrying out a complete reevaluation of the medical curriculum and its objectives. A further aim, according to Dr. WINDSOR C. CUTTING, dean of the medical school, is the close integration of the school with the rest of the university.

U. of Texas—Galveston

The medical branch, with the assistance and cooperation of the Josiah Macy Jr. Foundation, held a three-day conference on medical and psychological team work in the care of the chronically ill. The conference was under the chairmanship of Dr. MOLLY HARROWER and Dr. PAUL HOLBROOK, with Dr. FRANK FREMONT-SMITH representing the Macy Foundation and Dr. CHAUNCEY LEAKE, executive director, representing the medical branch.

The increasing importance of teamwork between internists, psychologists and psychiatrists was recognized and various ways in which it could be improved were discussed.

George Washington

The Lasdon Foundation has granted \$10,000 to scientists at the university to promote further research in tuberculosis. The grant will be used for laboratory and clinical studies, which are being carried on at the District of Columbia General Hospital, to investigate the best means of using available and new drugs in the treatment of tuberculosis. One phase of the research is to find a means of maintaining long-term treatment by preventing the tubercule bacilli from developing resistance to the drugs used for treatment. Dr. MONROE J. ROMANSKY, associate professor of medicine, and Dr. SOL KATZ, adjunct clinical professor of medicine will direct the research.

Individual Membership

in the

Association of American Medical Colleges

For the first time in 1954, medical college teachers and administrators, and other persons interested in medical education have the opportunity to become Individual Members of the Association.

Individual Membership means receiving the *Journal of Medical Education* each month. It means participating in the discussions of the Annual Meeting and receiving the reports of the Teaching Institutes. It means receiving copies of the yearly *Directory*, the *Proceedings* of the Annual Meeting, the booklet on "Admission Requirements of American Medical Colleges," and other regular Association publications. And it makes available a valuable, though limited, information service and a personnel exchange service.

Individual Membership, at only \$10 a year, is open to any person who has demonstrated a serious interest in medical education over a period of years. All the privileges of membership begin immediately after payment of the \$10 fee, although confirmation must await official action at the next Annual Meeting.

To obtain membership, fill out the application form below, append check for \$10, and return to the Association's central office at 185 N. Wabash Ave., Chicago 1, Ill.

INDIVIDUAL MEMBERSHIP APPLICATION

Association of American Medical Colleges
185 N. Wabash Ave.
Chicago 1, Ill.

Name _____

Mailing Address _____

(City) (Zone) (State)

Field of medical education in which chief interest lies _____

College or other connection _____

Tulane

Dr. WALLACE H. CLARK JR., instructor in pathology, and currently a pathologist for the U. S. Army at Fort George G. Meade, Md., has been awarded a \$30,000 grant from the John and Mary R. Markle Foundation, with \$6,000 allotted each year for five years.

The Rudolph Matas Award in Vascular Surgery, named after Dr. RUDOLPH MATAS, 93-year-old emeritus professor of surgery, was presented to Dr. EMILE F. HOLMAN, professor of surgery at Stanford University School of Medicine, and Dr. MICHAEL E. DEBAKEY, professor and chairman of the department of surgery, Baylor University College of Medicine. The awards were presented April 6, once in personal ceremonies by Dr. Matas and once in public ceremonies at the Tulane campus.

Dr. Holman received the award for his experimental and clinical pioneer work on arteriovenous fistulae and the effect of fistulae on blood circulation in general; for his experimental physiological - pathological work on ductus arteriosus and pulmonary stenosis and his original research and current work on aneurisms.

Dr. DeBakey received the award for his surgical treatment of aneurisms of the aorta through arterial transplants in which the aneurisms are removed, portions of new blood

vessels are transplanted in patients' bodies and rehabilitation is brought about. The award was established in 1933.

U. of Washington

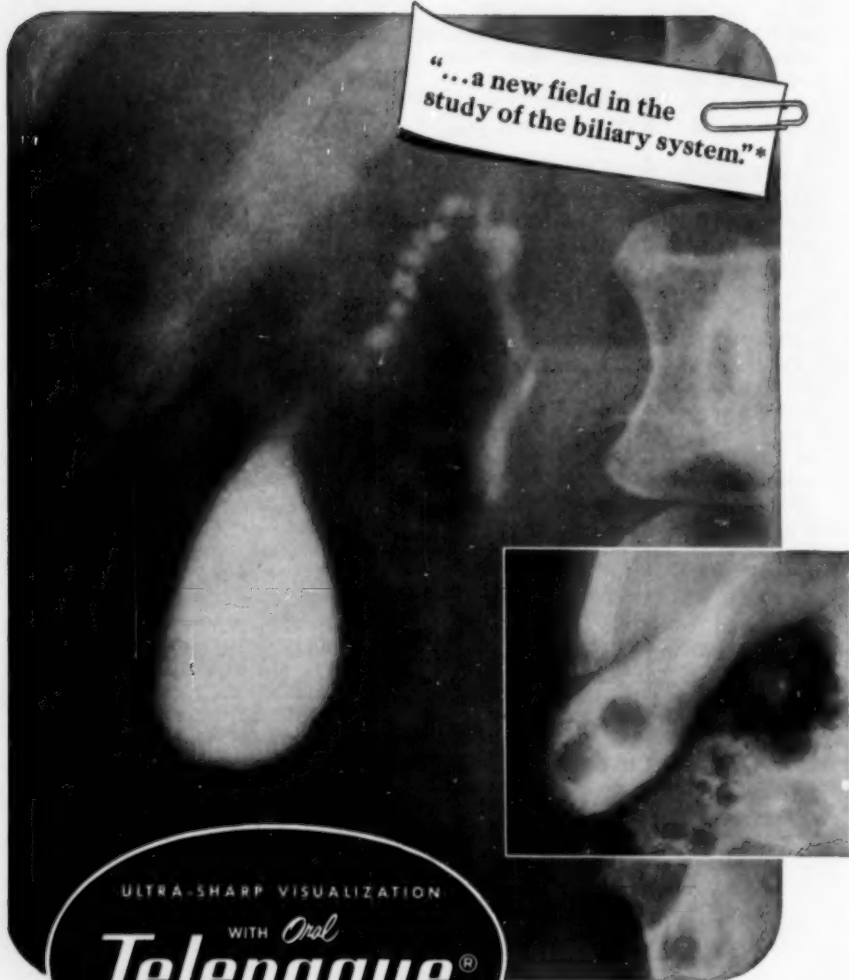
A 24-million volt betatron for the treatment and study of cancer and other biological and physical problems has been installed in the new Barnard Free Skin and Cancer Hospital by the Edward Mallinckrodt Institute of Radiology of the university school of medicine.

Preliminary physical tests on the betatron are now being carried out by Dr. MICHEL TER-POGOSSIAN, physicist of the institute. It is expected that the instrument will be in full operation by June, under the supervision of Dr. WILLIAM B. SEAMAN, associate professor of radiology.

Yale

A weakened strain of "live" polio virus that is harmless to monkeys and which immunizes them against this disease can now be produced in the laboratory, according to Dr. JOSEPH L. MELNICK, associate professor of microbiology. This represents a step forward in the possible production of a live-virus vaccine against the paralytic polio. Dr. Melnick's work is supported by a March of Dimes grant from the National Foundation for Infantile Paralysis.

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* Shehadi, W.H. Am Jour Roentgenol., 69:360, Sept., 1952

Audiovisual News

AV Specialists Meet

Directors and specialists in all fields of AV education attended the annual five-day convention of the department of audio-visual instruction of the National Education Association, March 1-5. The consensus of the participants was that there is a big need for closer cooperation between the administrator and the instructor in planning the teaching program.

In a keynote address, Rensis Likert, director, Institute for Social Research, University of Michigan, declared that audiovisual methods have demonstrated their capacity in improving instructional efficiency. He pointed out that the effectiveness of audiovisual materials could be doubled if more research were given to audience characteristics.

Summarizing conference reports, Carolyn Guss of the Audio-Visual Center, Indiana University, said "... we are on the threshold of a great development in the production of materials and these materials will be used with increasing effectiveness in an environment in which the teacher has ... freedom to teach and the learner has freedom to learn."

Surgical Film Wins Award

"Patent Ductus Arteriosus," produced for E. R. Squibb & Sons by Sturgis-Grant Productions, won the award for films in the medical sciences category of the Golden Reel Film Festival held in Chicago, April 1-3. "Patent Ductus Arteriosus" was one of 27 medical films shown at the festival. Certificates of merit were awarded to "Man to Man," produced by the Mental Health Film Board, and to "Molly Grows Up," produced by Medical Arts Productions.

"Man to Man" was made to train psychiatric aids. "Molly Grows Up" deals with the biological and social aspects of menstruation.

The Golden Reel Festival was the first film festival sponsored by the Film Council of America. More than 400 films produced or revised in 1953 were shown in 13 different subject matter categories.

Summaries of Film Reviews

What You Should Know About Biological Warfare

8 min., sd., b&w., 16 mm., 1951.

America's agricultural, industrial and human resources are shown to be vulnerable to bacteriological warfare. Germs, toxins and plant regulators are the three groups of BW agents which potentially may be used. Aerosols delivered from planes or submarines, or materials handled by enemy saboteurs are the sources of danger. Personal and domestic hygiene, home nursing, prompt reporting of sickness, and the following of precautions given by radio are stated to be the keys to discovery, identification and control of BW agents of attack and their human victims. Specific steps to be taken in control of epidemics are given, with emphasis upon allaying fear from rumors.

This brief motivational and orientational film seeks to present the problem of BW and to create confidence in America's ability to handle any BW assaults. The alarming possibility of combined CW and BW attack must be presented to professional groups. And the blithe confidence of the film's tone, perhaps good for laymen, must be minimized for medical men who must know the vastness of the medical implications of BW epidemics. Production is excellent, restrained and professionally well handled throughout.

As an introduction to many kinds of discussions by and with lay or professional groups, the film provides provocative material which must be built upon by the instructor in question. The simplicity of the facts given requires elaboration. Since a high percentage of accurate information on BW is of a highly restricted nature, additional teaching

data will in most cases be rather speculative or deductive.—*D.S.R. and G.V.B. with MEND Panel, February 1954.*

Audience: Lay to professional audiences.

Production Data: **Sponsor:** Federal Civil Defense Administration, Washington, D. C.; **Producers:** Reid H. Ray Film Industries, Inc., Minneapolis, Minn.

Distribution: Regional Civil Defense Offices and Farm Bureau Mutual Insurance Cos., Columbus 16, Ohio, **Loans:** Twyman Films, Inc., 400 W. First St., Dayton 1, Ohio and Oregon State System of Higher Education, General Extension Division, Dept. of Visual Instruction, Corvallis, Oregon, **Rentals:** United World Films, Inc., 1445 Park Ave., New York 29, N. Y., **Sale:** \$19.75.

General Effects of Cold on Man

13 min., sd., b&w., 16 mm., 1951.

Wet cold, cold with wind, and deep still cold are shown to be threats to troops in action. The problems of maintaining heat balance during cold exposure are diagrammed. At a research laboratory the constriction of rabbit ear vessels with cold precedes demonstrations of human volunteers who submit to experiments in a cold room. The function of shivering is illustrated in humans and monkeys, and is contrasted with voluntary exercise. In military action the soldier is given his "do nots" regarding food, clothing, and activity. Warnings are given against trench foot. Frost bite is seen, and steps to check it given. Protection of individuals by group action is stressed, as fighting men are seen in maneuvers in the cold.

This talking motion picture covers vital information concerning the rationale of cold protection, and the principles of such protection in the military situation. The film is organized around the narration; the pictures are rather disjointed and generally merely of illustrative or filler nature. Purely technical qualities of sound, camera, titles, opticals, etc. are adequate.

With professional audiences the weaknesses of the film's verbal-visual concept and organization will tend to vitiate the importance of the contents. Sub-professional audiences may obtain a general orientation to the problems of human protection from cold.—*D.S.R. and G.V.B. for MEND Program, March 1954.*

Audience: Sub-professional medical personnel.

Production Data: **Sponsor - Producer:** Armed Forces Medical Illustration Service and Signal Corps, U. S. Army Department.

Distribution: Commanding General, Attention: Signal Officer, Headquarters, First to Sixth Army (according to location of user) or to Director, Armed Forces Insti-

tute of Pathology, 7th & Independence Ave., S.W., Washington 25, D. C., **Loans:** (use Code No. TF-8-1690); United World Films, Inc., 1445 Park Ave., New York 29, N. Y., **Sale:** \$19.05.

Modern Technics of Collecting Blood Samples

33 min., sd., color, 16 mm., 1951 (Revised 1953)

Following the adage "A laboratory test is no better than the specimen, and the specimen no better than the manner in which it was collected," venipuncture is performed by the open gravity method, with the Keidel-Sheppard vacuum tube, and with a syringe. In a new type of syringe, venous pressure helps to fill the barrel. The proper method for cleansing, rinsing, matching and sterilization of syringes precedes proper preparation of test tubes with and without anticoagulant. The vacutainer technique demonstrates that "taking blood is a biopsy." Five blood collection items are shown: Venipuncture, taking blood smears, splitting the specimen, the rainbow-stoppered multi-purpose kinds of vacutainers, the taking of multiple blood samples with one venipuncture. The method of mass taking of blood specimens (for public health work) and blood collection procedures (for blood bank use) are demonstrated.

This film covers a range of blood collection methods for various purposes, and shows the wide range of equipment developed by the sponsor. The content is almost a film atlas of this subject matter, stodgy and tedious in presentation and organization, lacking optimal visual analysis at many points, filmically static, and relying for continuity on a rather verbose narration which is often dissociated from the pictures. Notwithstanding, the essentials of the procedures are transmitted.

For teachers who may require film demonstrations of the many procedures included, the film will have value, whether used in whole or in part. For practitioners, the film will be a persuasive lesson on the vacutainer methods and equipment, besides refreshing basic techniques of venipuncture.—*D.S.R., 1954.*

Audience: Technicians, nurses, medical students.

Production Data: **Sponsor:** Becton, Dickinson and Co.; **Scientific Adviser:** Milan Novak, Ph.D., M.D., University of Illinois; **Producer:** Mervin W. LaRue.

Distribution: Becton, Dickinson and Co., Rutherford, N. J., **Loans:**

**Early Care of Plastic Surgery Cases.
Wounds of the Hand**

14 min., sd., color, 16 mm., 1945.

The importance of human hand function demands that the first principle of hand surgery in field hospitals shall be "save all you can." Operating on a woman's hand with several cleanly severed fingers, a blood pressure cuff produces a blood-free field which is cleaned, debrided, and split-skin grafted. At a combat station, a shrapnel wound of the hand is checked diagnostically, prepared, x-rayed, debrided; all foreign bodies are sought and removed; tendon repair is not advocated for the combat zone; a cut nerve is sutured together; primary closure by experienced operators is advocated; split skin grafts are utilized; and the wound is dressed. The role of the combat surgeon is shown to be one of preparation for the hand specialist later. A tendon repair after several weeks produces excellent function. Another hand, severely burned, is managed by plastic surgery.

As an introduction to the concepts and practices of field surgery of the hand, the film provides an orientation for field surgeons. Although surgical details vary in individual surgical practice, the principles are sound. The film is organized well, although there is some inconsistency in the content as judged by the title, and overall production is skillful.

For residents of surgery, for potential civil defense aid station surgeons, and for medical students, the film will be clear, provocative, and memorable. Obviously a surgeon with experience in hand cases will optimally prepare for and discuss the film's content.—D.S.R. and G.V.B. for MEND Program, February 1954.

Audience: Surgical residents, physicians for civil defense, senior medical students.

Production Data: Sponsor-Producer: Bureau of Medicine and Surgery, U. S. Navy Department, Washington, D. C.

Distribution: Chief, AV Training Aids Section, Bureau of Medicine and Surgery, U. S. Navy Department, 21st & E Sts. N.W., Washington, D. C., **Loan** (use Code No. MN-2715a); United World Films Inc., 1445 Park Avenue, New York 29, N. Y., **Sale:** \$81.75.

Transportation of Casualties

26 min., sd., b&w., 16 mm., 1951.

The infantry goes into battle, and with it the medical service. In demonstrations, medical corpsmen show many kinds of carry techniques for all types

of wounds, and for situations utilizing a single corpsman and two-man teams. Carriages by litter and by improvisations of all types are demonstrated up to mountainside engineering and travois poles. Liaison plane, glider and helicopter with stretcher pods are seen. The ambulance is shown in all its varied and improvised shapes from jeep to duck. Water carriers are seen. Hospital trains, box cars, ship evacuation and air transport culminate the mustering of the transportation items.

This survey of all the Army's ways of handling the wounded, from one man to hospital ships, trains and planes is a tribute both to Army organization and to the expensive waste of war that paradoxically invests so much in willful killing and praiseworthy preservation of life. Many excellent combat scenes enliven this atlas of medical transportation. Production skills are of professional calibre throughout, although the unnecessary dim music throughout would appear to be the compulsion neurosis of some Hollywood sound man afraid of silence.

For Army medical and non-medical audiences the film will provide an impressive compendium of shots of the many transportation services applied to casualties. For medical students the early sequences on patient carriage by individuals and by litter teams could provide helpful ideas of civil defense improvisations.—D.S.R. and G.V.B. for MEND Program, March 1954.

Audience: Army medical corps personnel.

Production Data: Sponsor-Producer: Armed Forces Medical Illustration Service and Signal Corps Service, U. S. Army Department.

Distribution: Commanding General, Attention: Signal Officer, Headquarters, First to Sixth Army (according to location of user) or to Director, Armed Forces Institute of Pathology, 7th and Independence Ave., S.W., Washington 25, D. C., **Loan** (use Code No. TF 5-1705); United World Films, Inc., 1445 Park Ave., New York 29, N. Y., **Sale:** \$35.72.

Disaster on Main Street

9 min., sd., b&w., 16 mm., 1952.

The effect of war on Main Street Anywhere is shown to have been enormously altered by airplanes and the A-bomb. Main Street Great Britain's fiery encounter with the Luftwaffe in 1940 shows in action the new warrior of the industrial age, the civilian. The fearful bomb retaliation upon Main Street Germany is shown, with the failure of German civil defense. Raids on Main Street Japan

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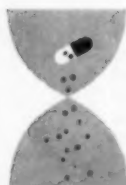
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1. Margolin, S., and Tislow, R.: Experimental and Clinical Efficacy of Trimeton and Chlor-Trimeton Maleate, *Ann. Allergy* 8:515, 1960.

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were tremendously effective because of civilian defense apathy even up to the culminating catastrophes of Hiroshima and Nagasaki. With our minds dulled by victories, the blunt question is posed of **America: Could your Main Street cope with modern disaster?**

This forthright and forceful appeal for civil defense preparation and against national apathy brings home the enormity of a potential atomic disaster, the critical role of civil defense organizations, and the penalties for failure to be prepared. The footage is from the past records of wars and disaster, the editing is intelligently done; but the restrained and excellent narration delivered by Edward R. Murrow is the spine of the film's substance.

As motivation for any group concerned with disaster in any capacity, this brief film cannot fail to carry its fateful if grim message. —D.S.R. and G.V.B. for **MEND Program, February 1954.**

Audience: Groups for Civil Defense.

Production Data: **Producer:** Castle Films, in cooperation with Federal Civil Defense Administration; **Narrator:** Edward R. Murrow.

Distribution: Regional Civil Defense Offices, **Loans:** United World Films, Inc., 1445 Park Avenue, New York 29, N. Y., **Sale:** \$19.75.

The Preparation and Use of Human Plasma

32 min., sd., color, 16 mm., 1945.

An introduction shows a beach assault and its supporting medical care. In a Red Cross blood collection center a volunteer gives a pint of blood. The blood is tested in a receiving room and transhipped to a processing plant. Separation of plasma and pooling precede taking of sample for testing. Frozen plasma is desiccated in vacuo, and the dried plasma is sealed in cans, each with a matching can of distilled water and the requisite tubing and needles. In the beach attack, men are killed and injured. A corpsman treats a severe casualty, and in the field gives him a pint of reconstituted plasma, following all the proper steps for assembly of the plasma set. With the casualty responding, the corpsman fills out the plasma use report.

Virus hepatitis is a great hazard stemming from plasma prepared by the pooling method shown in the film, with probable virus preservation by the freezing and desiccation in vacuo. It is probable that storage of sterile plasma at room temperature for 6-9 months before processing, or some other method, is the answer to the grave problem of serum

jaundice. The processing method shown here is probably obsolete. Film production is good in most details, and the simulation of battlefield administration is realistic enough to create the requisite motivation.

For medical corpsmen, medical students and nurses, the film provides a background on plasma preparation plus procedural information on the use of plasma kits. Possibly the film could be used in its parts in order to circumvent the obsolete processing methods.—D.S.R. and G.V.B. with **MEND Panel, February 1954.**

Audience: Medical corpsmen, nurses, medical students.

Production Data: **Sponsor:** Bureau of Medicine & Surgery, U. S. Navy Department; **Producer:** Paul Hauce Productions, New York.

Distribution: Chief, AV Training Aids Section, Bureau of Medicine & Surgery, U. S. Navy Department, 21st & E. Sts. N.W., Washington, D. C., **Loans:** (use Code No. MN-3543); United World Films, Inc., 1445 Park Ave., New York 29, N. Y., **Sale:** \$189.35.

Soft Tissue Wounds

11 min., sd., color, 16 mm., 1944 (**Medicine in Action 24**).

Four cases of shrapnel wounds occurring during the Italian campaign are presented. The first case, a shell fragment in the hamstring muscle, is opened, debridement performed and the piece removed under spinal anesthesia; after eight weeks healing the soldier is returned to duty. The second case, after removal of a superficially located fragment in the back, is handled by secondary closure and discharge to duty after six weeks. The third case, a shell fragment in the leg, is opened and debrided, with foreign body removal, and skin-grafted after secondary closure before return to duty. The fourth case, multiple wounds of arm and hand from an anti-personnel mine, is opened, debrided and cleaned, allowed to heal by granulation; the wound is later excised in the OR and closed to produce a superior functional and aesthetic result. The healed cases are shown as a summary.

This film recitative of four relatively similar soft tissue wounds shows good and expeditious war surgery, with rapid return to duty and excellent functional results. Camera, editing and narration are workmanly for this bit of medical reportage, despite the inadequate color and photography typical of wartime field shooting.

For medical students this is an excellent brief motivational and instructional

unit in the surgery of trauma, emphasizing the simple principles of primary and secondary management of this general type of wound, but seeking to avoid step-by-step methodology as such.—*D.S.R. and G.V.B. with MAVI Panel, February 1954.*

Audience: Medical students, interns.

Production Data: Sponsor and Producer: Bureau of Medicine & Surgery, U. S. Navy Department.

Distribution: Chief, AV Training Aids Section, Bureau of Medicine & Surgery, U. S. Navy Department, 21st & E Sts. N.W., Washington, D. C. **Loan:** (use Code No. MN-3726d); United World Films, Inc., 1445 Park Ave., New York 29, N. Y. **Sale:** \$58.54.

General Effects of Heat on Man

19 min., sd., b&w., 16 mm., 1951.

Heat in various life situations is shown to be friend or enemy. At Fort Knox Research Laboratory, volunteers undergo treadmill experiments in the presence of environmental heat and humidity; the roles of perspiration and its evaporation, of fluid and salt intakes are indicated. A tank crew broken down in desert maneuvers demonstrates adjustments to heat; a lost squad of soldiers provides a case of heat exhaustion. In a desert camp a soldier brings on a heat stroke through carelessness, and is treated for its relief. In the laboratory on the treadmill a man walks for hours when properly supported by fluid, salt and heat-protective devices. In the humid jungle and in the

close interior of a tank, soldiers collapse from heat exhaustion.

This illustrated lecture film covers many critical and valuable points of man's self protection from heat. Film facts are those developed or authenticated by methodical laboratory work. However, the film's development of the material is quite inadequate for either scientific or lay audiences. Film direction of the simulated desert situations is unconvincing and unsatisfactory, and the fragmentary laboratory sequences are unfortunately based on verbal rather than visual continuities. Purely technical film qualities of sound, camera, opticals, titles, etc. are good enough.

For medical professional groups the film is neither clear enough nor analytical enough nor of sufficient factual depth to warrant curricular use. For sub-professional groups there is orientational value to be gained.—*D.S.R. and G.V.B. for MEND Program, March 1954.*

Audience: Sub-professional groups, medical corpsmen.

Production Data: Sponsor - Producer: Medical Illustration Service and Signal Corps, U. S. Army Department; **Technical Assistance:** Field Research Laboratory, Fort Knox, Kentucky.

Distribution: Commanding General, Attention: Signal Officer, Headquarters, First to Sixth Army (according to location of user) or to Director, Armed Forces Institute of Pathology, 7th & Independence Ave., S.W., Washington 25, D. C. **Loan:** (use Code No. TF 8-1691); United World Films, Inc., 1445 Park Ave., New York 29, N. Y. **Sale:** \$19.03.

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Book Reviews

The Billroth I Gastric Resection

H. G. Moore Jr., M.D.; and Henry N. Harkins, M.D., Ph. D., F.A.C.S. Little, Brown & Company, Boston, 1954. 127 pp. with index. \$7.50

Students of the problems relative to the surgical therapy of peptic ulcer should welcome this volume. It is far more than a treatise concerned with a technical description of an operative procedure. The book begins with an excellent historical background of the development of gastric resection in the treatment of peptic ulcer. This is followed by a concise discussion of the physiological principles upon which the operation is based. Sections are devoted to selection of patients and to management of patients before and after operation. The description of the technique employed in performing the Billroth I operation is well presented in the text and is accompanied by lucid illustrations.

The chapter entitled *Postgastrectomy Syndromes* is stimulating and worthy of particular consideration. The authors have presented a carefully organized discourse on the physiological alterations subsequent to resection of the stomach. Consideration of variation of the surgical approach to gastroduodenal ulcer does not stem from a significant failure of current procedures to protect against recurrent ulceration but rather from the development of disturbances in gastroduodenal physiology. The authors have assembled and evaluated the evidence which has been presented to explain such aberrations in function after gastric resection and have made an objective analysis of the problem. It would seem that this volume has resulted in a compact analysis of the present status of gastric resection for gastroduodenal ulcer, rather than merely as a discussion of a particular method.

Biographical sketches of the men who have contributed to the development of gastric surgery in the past are appended. An excellent and comprehensive bibliography is included. This monograph is recommended to those interested in the surgical treatment of peptic ulcer and, in addition, should serve as a valuable reference for medical students.

John M. Beal, Cornell

The Chest, 2nd edition

Leo G. Rigler, M.D. The Year Book Publishers, Inc., Chicago, 1954. \$8

The second edition of "The Chest" is a practical handbook in the full sense of the term. As before, it is small in size but filled with a wealth of information. Naturally, it cannot be very detailed but the essentials of most every chest disease are discussed and illustrated. It is a distinct improvement over the first edition, since it covers material not adequately treated in the earlier book.

It is ideal for the medical student, general practitioner or the new resident, since it makes available so much concise information in such a small space, omitting the questionable, which is often confusing to the uninitiated.

There will be disagreement with some of Dr. Rigler's ideas and procedures, such as his recommendation for "spraying 10 per cent cocaine into the back of the mouth" for anesthesia in bronchography. On the whole, however, it is believed that this book will meet with almost universal approval and will undoubtedly find a wide use.

The illustrations, though small, are well chosen and clearly reproduced.

John F. Roach, Albany

Psychosomatic Case Book

Roy R. Grinker, M.D.; and Fred P. Robins, M.D. The Blakiston Company, Inc., New York, 1954. 325 pp. with index. \$6.50

The title of this book underplays its scope. The book is more than a collection of case histories. It includes a thoughtful review and discussion of the major theoretical concepts of psychosomatic medicine, the findings of recent experimental and clinical research and a detailed discussion of some of the practical and theoretical problems of diagnosis and therapy. This material is systematically presented and is well integrated with a wide variety of case material. The use of case histories throughout the book (there is a total of 79) has the advantage of graphically illustrating and objectifying the particular viewpoints and ideas expressed in the text.

The authors have intended to reach by the language and form of their presentation "students at many levels of those professions concerned with sick

people." They have been as successful as anyone could be in making themselves understandable to such a large audience. Some readers may not comprehend at first perusal the significance or advantage of such terms as "transactional processes" or "field concepts." But by elaboration and lucid examples, these and other seemingly obtruse terms tend to become clarified. Many readers will be pleased to learn that the "field concept" of psychosomatic medicine is essentially a restatement of the multiple factor theory of etiology of health and disease. The authors espouse this working hypothesis because of a recognition that modern theoretical etiological concepts in psychosomatic medicine are not as yet substantiated and that they often disregard important empirical data. Ideas, for example, that single complex factors, such as environmental stress, a specific emotional constellation, a personality profile, or social change have a cause and effect relationship with a specific organ function or dysfunction are criticized as being specious and oversimplified. The authors' own viewpoints on the theoretical problems in etiology and pathogenesis of illness—from the psychosomatic point of view—are sensible and instructive.

The eight chapters on "Special Syndromes" are good and include well written summaries of the latest information available on pertinent experimental and clinical research. One unfortunate weakness in this and other sections is that there are more errors than there should be in the bibliographical references and annotations.

The three chapters on "The Problems of Diagnosis" and three chapters on "Therapy" are outstanding. They, with the chapters on "Special Syndromes," supply a wealth of stimulation and information not only in the practical formulation and management of problems in the practice of general medicine and psychiatry, but in the furthering of research in psychosomatic medicine. One fruitful research lead, for example, is the observation that depression or psychological defenses against depression may be a psychological index of the seriousness of somatic and visceral vulnerability to disease and to the amount of frustration of infantile constitutional needs an individual has experienced.

The book should be read in full detail by people who are beginning students in comprehensive medicine and who have a relative paucity of clinical mate-

rial from which to make their own observations. It is first-rate reading, in a more selective fashion, for those who have access to clinical material and are familiar with the current concepts and syndromes in psychosomatic medicine.

Louis A. Gottschalk, Cincinnati

Clinical Endocrinology

Karl E. Paschke, M.D.; Abraham E. Rakoff, M.D.; and Abraham Cantarow, M.D. Paul B. Hoeber, Inc., Medical Book Department of Harper Bros., 1954. 768 pp.

This book is intended as a guide to practicing physicians. It is written from the standpoint of the chemistry and physiology of the various endocrine glands rather than from the clinical pictures of endocrine disturbances as they present in a physician's office. Separate chapters are devoted to individual endocrine glands. A separate chapter is included on obesity. The last chapters on procedures and methods of study and commercial hormone preparations are more in the nature of a list than of detailed directions.

In the section on any individual gland, there is the usual embryological, anatomical, chemical and physiological discussion in the opening chapter. Chapters on hyper- or hypofunction may then follow. By this technique there is a good bit of repetition and occasionally, the approach is not too critical. As an example, in the discussion on myxedema, statements are made that thyroid hormone cures the disease and will repair coronary arteries.

The format is very pleasant. The type is readable, the paper excellent and the photomicrographs are well reproduced. There are references at the end of each section which include both classical and recent articles.

The Psychiatric Aide

Alice M. Robinson, R.N., M.S., director of nursing service and nursing education, Boston State Hospital. J. B. Lippincott Company, Philadelphia, 1954. 174 pp. with index. \$3

The training of psychiatric aides for service in mental hospitals should benefit a great deal from this book. Its approach is to give the aide an understanding of his part in the care of the mentally ill.

Three technical areas are briefly discussed: growth and development, behavior problems and special therapeutics. The remainder of the book emphasizes the importance of the aide's having a sense of responsibility toward his job—the hospital and the hospital staff, the patient's family, and, most

important, the patient and how to put this feeling of responsibility into practice.

The book will be useful not only in training aides and student nurses who care for psychiatric cases, but could also be given to relatives of patients to increase their understanding of the care and treatment being given.

S. C.

Pharmacology, 4th edition

J. H. Gaddum, Sc.D., F.R.S., M.R.C.S., L.R.C.P., professor of pharmacology, University of Edinburgh. Oxford University Press, London, 1953. 562 pp. with index. \$8

This text is distinguished by the fact that the author has recognized the unavoidable inadequacy of the information in such a brief survey and has provided means for the student to integrate and amplify his knowledge of pharmacology with facility.

This has been accomplished, first, by including in the introduction a classified list of the commonly available important sources of information; second, by including many cross-references in the textural material; third, by including salient references to the literature as footnotes at the bottom of each page and fourth, by providing an unusually complete index. Other features worthy of commendation are the illustrations, the appendix of chemical names, and the section on quantitative pharmacology.

Like most surveys of this subject, this one tends to be somewhat dogmatic but is relatively free from errors. The author has neglected some recent work on the distribution of body water, nalorphine, mercaptopurin, primaquine and the toxicity of dihydrostreptomycin. His treatment for acute morphine poisoning is antiquated. One would prefer to have less emphasis on chloroform, nicotine, quinine and locally applied sulfonamides and somewhat more emphasis on anti-epileptic drugs, chloroquine, primaquine, the toxicity of pyrimethamine, and the use of oral penicillin.

The book is well organized and is written in a lucid and readable style. It probably contains sufficient information to satisfy the average medical student and stimulate the better student to further reading. The printing, binding and format are good though the glossy paper is not a very happy choice.

Earl H. Dearborn, *Boston*

A History of the Theories of Aether and Electricity

Sir Edmund Whittaker, F.R.S., honorary

fellow of Trinity College, Cambridge. Philosophical Library, Inc., New York, 1954. 307 pp. with index. \$8.75

This book describes the revolution which occurred in physics between 1900 and 1926. It includes the discoveries of Special Relativity, the older Quantum Theory, General Relativity, Matrix-Mechanics and Wave-Mechanics.

Some specific general problems discussed are: the discoveries which led up to our present knowledge of subatomic structure, the transmutation of matter, the relative motion of the earth and aether, the behavior of electric charge and current, Relativist dynamics, pure temperature radiations, the introduction of photons, difficulties connected with the Newtonian law, Einstein's principle of equivalence, connection of the Einsteinian and Newtonian theories, the expanding universe, therionics and photoelectricity, exchanges of energy between radiation and molecules, magnetism and electromagnetism, and those important subjects which arose in connection with matrix and wave-mechanics.

In the general field of biology the book should be of considerable interest to the biophysicists and radiologists. However, many workers in physiology, biochemistry, and general areas involving electrical measurements will want to read this book.

R.A.D.

Practical Methods in Biochemistry, 6th edition

Frederick C. Koch and Martin E. Hanke. The Williams & Wilkins Company, Baltimore, 1953. \$5.

In the preface to the first and sixth editions, it is implied that this book is primarily designed for the use of medical students. Although it contains a wealth of material, valuable to the professional biochemist, it is the opinion of the reviewer that it does not meet the needs of modern medical biochemistry.

Thirty years ago, there may have been more justification for the numerous qualitative tests which are given in detail in the early chapters. In recent years, however, so much new material has been made available in the field of biochemistry, especially in relation to the nature of enzyme systems, that it would seem highly desirable to utilize more of the excellent qualitative and quantitative material in this book to illustrate general principles or important reactions in biological systems.

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Chapter five, dealing with hydrogen ion activity, pH, and buffers is well done; but a less rigorous treatment, with more emphasis on the relationship between the material in this chapter and that on the regulation of body neutrality, would be more suitable for the average medical student.

In view of the wide use of the photoelectric colorimeter in industrial and clinical laboratories, it is surprising that so little attention is devoted to the general principles of light absorption measurements. Many of the methods for blood constituents are still based on measurements with the visual colorimeter, although most clinical laboratories now employ procedures utilizing photoelectric colorimetry.

The completely new chapter dealing with the determination of biological materials by the use of the Van Slyke-Neill manometric apparatus is well done and will be of great value to many workers, since this material is widely scattered in the literature. The need, however, for such a chapter in a laboratory manual for medical students is debatable. The same criticism applies to the chapter which gives detailed directions for the quantitative determination of most of the vitamins. A colleague of the reviewer, who is well versed in the field of microbiological analysis, commented on this chapter of the book, "In general, the treatment is excellent but one who has not had experience in this field could not judge which of the experiments were designed primarily for classroom work and which for general application in the field."

Although some parts of this text need to be modernized, it contains a wealth of valuable information for the beginning student as well as the teacher of biochemistry. It might serve very well as a reference text for the project type of teaching that is gaining in popularity in the field of medical biochemistry.

Nerve Impulse

David Nachmansohn, editor. Transactions of the Fourth Conference, March 4-6, 1952, Princeton, N. J. Josiah Macy Jr. Foundation, New York, 1954. 224 pp. \$4

"These conferences are designed not to present neat solutions to tidy problems, but rather to elicit provocative discussion." This prefatory remark nicely sums up the significance of this stimulating little volume. The fourth conference and the book derived from it have very

adequately accomplished their designated purpose.

In the borderland of neurophysiologic research, physical chemistry and biology are forcibly conjoined. In these pages are considered such a physical and biological purview of certain aspects of three branches of sensory physiology, under the titles "Mechanism of Vision," "Mechanism of Hearing" and "Sensory Receptors." Brief presentations of new material on these three subjects are made by George Wald of Harvard, Hallowell Davis of St. Louis, and Yngve Zotterman of Stockholm. Incisive questions and informed discussion by members of the distinguished panel make up a larger portion of the volume.

The conference is recorded almost verbatim, as a result of which the style is hardly literary. That discussants occasionally stray from the immediate point provides a graphic demonstration of the semantic difficulties raised by the problem of sensation. Informal discussion of this type constitutes one of the main values of all scientific congresses. This book provides the reader with the unpremeditated comments which at most meetings are available only to a fortunate few.

In common with the volumes prepared from the three previous conferences, this is essential reading for all with neurophysiological leanings. Those with other physiological interests will equally find stimulation and semantic meat.

Bill Garoutte, California

Books and Pamphlets Received

(As space permits, those with the greatest interest to our readers will be reviewed)

Aids to Anaesthesia

Victor Goldman, F.F.A.R.C.S., D.A., L.R.C.P., M.R.C.S. Bailliere, Tindall & Cox, 1954. 318 pp. with index. \$2.25

The Billroth I Gastric Resection

Horace G. Moore Jr., M.D., and **Henry N. Harkins**, M.D., Ph.D., F.A.C.S. Little, Brown & Company, Boston, 1954. 137 pp. with index. \$7.50

Congenital Heart Disease

Henry S. Kaplan, M.D., professor of radiology, Stanford University School of Medicine; and **Saul Joel Robinson**, M.D., clinical instructor in pediatrics, Stanford University School of Medicine. McGraw-Hill Book Company, Inc., New York, 1954. 117 pp. with index. \$12.50

A Doctor Talks to Women

Samuel Haynor Meaker, M.D., Fellow of the American College of Surgeons. Simon & Schuster, New York, 1954. 223 pp. with index. \$3.95

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Current Therapy, 1954

Edited by **Howard F. Conn, M.D. W. B. Saunders Company, 1954. \$50 pp. with index.**

Manual of Clinical Mycology, 2nd edition

Norman F. Conant, Ph.D.; David Tillerson Smith, M.D.; Roger Denis Baker, M.D.; Jasper Lamar Callaway, M.D.; and Donald Stever Martin, M.D. W. B. Saunders Company, Philadelphia and London, 1954. 432 pp. with index.

Mayo Clinic Diet Manual

Edited by the Committee on Dietetics of the Mayo Clinic. W. B. Saunders Company, Philadelphia and London, 1954.

Methods in Medical Research, Volume 6

J. M. Steele, Editor in chief. Year Book Publishers, Inc., 1954. 257 pages with index. \$7

New and Non-Official Remedies, 1953

Issued under the direction and supervision of The Council on Pharmacy and Chemistry, American Medical Association. J. B. Lippincott, Philadelphia, 1953. 517 pp. with bibliography, \$2.65

Nobel Prize Winners in Medicine, 1901-1950

Lloyd G. Stevenson, M.D., Ph.D. Abelard Press, Inc., New York, 1954. 283 pp. with index, \$6.50

Readings in the Theory and Practice of Medical Social Work

Edited by **Dora Goldstine. The University of Chicago Press, 1954. 342 pp. with index. \$5**

Science Book of Wonder Drugs

Donald G. Cooley. Pocket Books, Inc. Published in cooperation with Franklin Watts, Inc. 238 pp. \$5c

Textbook of Organic, Medicinal and Pharmaceutical Chemistry, 2nd edition

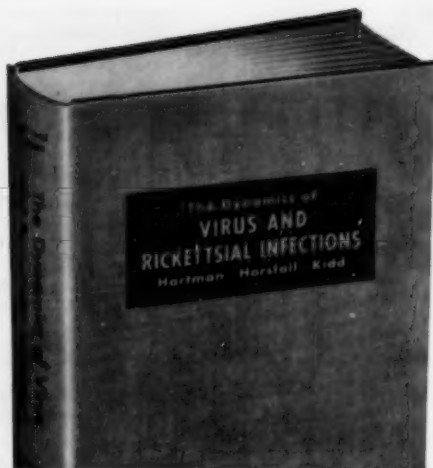
Charles O. Wilson, Ph. D. and Ole Glasvold, Ph.D. J. B. Lippincott Company, Philadelphia, 1954. 774 pp. with index. \$10

Virus and Rickettsial Infections

Frank W. Hartman, M.D., Frank L. Horsfall Jr., M.D., and John G. Kidd, M.D. The Blakiston Company New York, 1954. 461 pages, \$7.50

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• **BIOCHEMIST:** Ph.D., desires change. Present position: 25 years medical school professor. Many publications on metabolism and nutrition. Honors, awards, editorial boards. Will consider research, teaching, administration, clinical chemistry, editorial work. Address: A-92.

• **ANATOMIST:** Age 47; woman, M.S. and several years additional training. 12 years teaching experience in all branches of anatomy, especially gross and neuroanatomy. Publications, references; available immediately. Address: A-93.

• **INTERMIST-PHYSIOLOGIST:** M.D., Ph.D. Age 31. Board eligible with interest in gastroenterology. 2 years residency in internal medicine, 1 year residency in G. I. and 2 years research and teaching physiology. Desires position with research facilities in basic science and clinical fields. Address: A-94.

• **BIOCHEMIST:** Ph.D. 1943. Extensive research experience since 1941 in enzymes, physical chemistry of proteins, plasma, microbiology and chromatography. 22 publications. 2 years teaching of graduate students, 4 years of medical students as assistant professor. Desires permanent position with opportunity for research and teaching or administration in northern section of country. Available after August 1954. Address: A-95.

• **BACTERIOLOGIST:** Ph.D. Man. Age 30, married, veteran. Teaching experience in medical school. Publications and references. Sigma XI. Would like teaching-research position in medical bacteriology, virology, or immunology. Prefer location in west or southwest section of country but would consider other location. Available July, 1954. Address: A-96.

• **PHARMACOLOGIST-PHYSIOLOGIST:** Male, Ph.D. Broad teaching experience at both undergraduate and graduate levels; has organized course in medical pharmacology. Active in research, including clinical applications. Publications. Member of professional societies. Available on short notice. Address: A-97.

• **PHYSIOLOGIST:** M.D., M.A. chemistry, diplomate. 27 months of residencies. 5 years of practice. 3 years of research and teaching. Research papers in pulmonary physiology and biophysics. Desires teaching position with opportunity for research. Address: A-98.

• **SURGEON:** M.D., L.R.C.S. Foreign-born; naturalized. Experience includes 2 years post-graduate work in surgery and 6 years approved residency. Desires teaching-research position in medical school. Available July 1954. Address: A-99.

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• **BIOCHEMIST-PHYSIOLOGIST:** Ph.D., age 27, 3 years teaching experience, research on cellular and blood thymo-nucleic acids, relationship to stress and tumor activity. Interested in working toward M.D. degree. Address: A-105.

• **ANATOMIST:** Ph.D., 33 years old. Has taught in recognized medical school. At present executive position in pharmaceutical industry. Wishes to return to academic profession. Has taught all fields of anatomy; interested in research. References; publications. Address: A-106.

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• **SURGEON:** 38, married, veteran. Diplomate of the American Board of Surgery. Training in general surgery with fellowship in tumor surgery. Background of research in biochemistry. Desires teaching position with opportunity for research; U. S. or foreign. Available July 1. Address: A-111.

• **ORTHOPEDIC SURGEON:** 36; certified; university trained; M.S. (orthopedic surgery) experience in traumatic surgery and rehabilitation of severely disabled. Seeks association with diplomate and university hospital affiliation. Address: A-112.

• **PHYSIOLOGIST—MICROBIOLOGIST:** Man, Ph.D., 30, veteran. 7 years experience in teaching physiology, microbiology and histology, medical school level. Member of scientific societies. Desires teaching fellowship with opportunity to work for M.D. in return for tuition

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• **PHARMACOLOGIST—PHYSIOLOGIST:** M.S., Zoology; Ph.D. expected June 1954. Experienced in pharmaceutical research, teaching experience in pharmacy during army service. Desires research and teaching position in physiology and pharmacology. Special interest in endocrinology. Member scientific societies, Sigma Xi. Publications; references. Address: A-114.

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• **HISTOLOGIST—HISTOCHEMIST:** Ph.D. Harvard; young man, teaching and research experience. Publications; member of scientific organizations. Interested in obtaining teaching or research position in eastern U. S. Address: A-118.

• **LABORATORY SUPERVISOR:** Administrative and/or teaching position in medical technology. 10 years supervisory experience. B.S. in bacteriology. Graduate credits in biochemistry, histology and pathology. Laboratory officer, Sanitary Corps, Medical Department, U. S. Army 4 years (captain). Publications; references. Seeks stimulating position, preferably with academic affiliation. Address: A-119.

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